

Psychological Bulletin

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THE
PSYCHOLOGICAL BULLETIN

1. GENERAL

212. CALKINS, M. W., The Truly Psychological Behaviorism. *Psychol. Rev.*, 28, 1921, 1-18.

Extreme behavioristic psychology, represented by Prof. Watson, is criticized on the ground that it departs too widely from historical conceptions of psychology and biology. Furthermore is it not fully adequate to the facts—especially the analysis of sensory qualities and “thought.” Modified behavioristic psychology, represented by Prof. Warren, takes the facts of consciousness into account. The difficulty with Prof. Warren’s position is the tendency to identify consciousness and neural process (different observational facts). The procedure is metaphysical and not psychological. Self-psychology, the author maintains, is the “only genuine behavioristic psychology.” Self-psychology is “behavioristic when it stresses the relation of self to environment.” It is the science of a behavioristically conceived individual, the self, in relation to a behavioristically conceived environment.

YOUNG (Minnesota)

213. GILSON, E., Descartes et Harvey. *Rev. Philos.*, 1920, 90, 432-458; 1921, 91, 108-139.

Influence of the Scholastics upon Descartes’ physiological theories, and the relationship between the views of Descartes and Harvey.

KITSON (Indiana)

214. MACCURDY, J. T., Psychiatry and “Scientific Psychology.” *Ment. Hyg.*, 5, 1921, 239-265.

Believing that what has heretofore been a private quarrel between psychiatrists and “academic psychologists” over hypothetical and systematic psychological problems of the unconscious

and the like, must now be taken before the public for its participation, the author attempts to answer Dunlap's recent book on "Mysticism, Freudianism and Scientific Psychology." The author claims that the hypothesis of the unconscious is found essential by many psychiatrists and therefore that Dunlap's attack upon this hypothesis concerns more than the psychoanalyst. The author disagrees with Dunlap's view that mysticism is essentially an emotional attitude on the part of persons who are too tender-hearted or impatient to accept scientific explanations of phenomena. It is claimed that Dunlap's critical characterization of the Freudian method of collecting data—the anecdotal or historical method—is unjust since the collection of any data is to a certain extent anecdotal, particularly in such cases in which all conditions under which data are observed are not controlled. The author attempts to defend the notion of "unconscious consciousness" on the ground that hypnosis and divided personalities demonstrate beyond a doubt that there exists a consciousness of which the individual may sometimes be unaware.

Finally the author criticizes Dunlap's own psychology. He characterizes Dunlap's statements of the biological conditions of consciousness as mere tautology because they may be reduced to the statement: "Sometimes when the nervous system functions, there is consciousness." He claims that Dunlap has failed to do justice to "synthesis" in psychology.

WHEELER (Oregon)

215. FRANZ, S. I., Cerebral-mental Relations. *Psychol. Rev.*, 28, 1921, 81-95.

Address of the president, before the American Psychological Association, Chicago Meeting, December, 1920. The author discusses the bearing of certain recent observations of aphasia upon the problem of cerebral-mental relations. The main points are "(1) that although there is a general dependence of mental states upon the state of the brain, there is also (2) not the defined dependence of a special mental state upon the integrity of certain special cerebral parts." Permanent damage to the cerebrum does not certainly mean a permanent mental disturbance.

YOUNG (Minnesota)

216. SAFFIOTTI, F. U., La evoluzione della Psicologia sperimentale in Italia. *Riv. di Psicol.*, 16, 1920, 129-153.

History of the development of experimental psychology in Italy from the time of G. Sergi (1873) with a discussion of present tendencies.

ELRINGTON (Washington)

217. KIESOW, F., *Del fato e dei concetti dell' anima nell' Eneide di Virgilio. Contributo alla Psicologia dei popoli.* Miscellanea di studi critici in onore di Ettore Stampini, p. 209-224. S. Lattes e C., Torino—Genova. 1921.

Auf Grund der durch Wilhelm Wundt gewonnenen völkerpsychologischen Erkenntnisse sucht der Verf. sowohl den die Dichtung und das ganze Zeitalter der Dichters beherrschenden Glauben an das fatum, sowie auch die verschiedenen, in dem Werke enthaltenen Seelenvorstellungen auf ihre eigentlichen Ursachen zurückzuführen. Wegen Mangels an Raum beschränkt sich der Verf. in der vorliegenden Mitteilung auf den Inhalt der ersten fünf Bücher, das psychologisch nicht minder wichtige sechste Buch und was sonst vom Handpunkte der Völkerpsychologie aus von Interesse sein kann, wird an anderem Orte behandelt werden.

KIESOW (Turin)

218. KIESOW, F., Guglielmo Wundt. *Arch. ital. di Psicol.*, 1, 1921, 203-213.

In diesem Nachruf sucht der Verfasser, ein Schüler und Anhänger des am 31. August 1920 dahingeshiedenen Gelehrten, auf Grund der von ihm hinterlassenen umfangreichen Werke ein Lebensbild des Verstorbenen zu entwerfen und seine Verdienste um die Neubelebung des philosophischen Denkens und die Begründung der neueren Psychologie in das rechte Licht zu stellen.

F. KIESOW (Turin)

2. NERVOUS SYSTEM

219. DOI, Y., On the Existence of Antidromic Fibers in the Frog and their Influence on the Capillaries. *J. of Physiol.*, 1920, 54, 213-217.

The existence of antidromic fibers in the posterior roots of spinal nerves of the frog is demonstrated. Mechanical stimulation

of these fibers results in an increase in the volume of the hind limb, due mainly to dilatation of skin vessels.

ANDERSON (Yale)

220. NEAL, H. V. Nerve and plasmoderma. *J. of Comp. Neurol.*, 33, 1921, 65-75.

Examinations of dog-fish embryos furnish evidence that the connections between nerve and muscle are at the outset nerve structures—neuraxones and their sheaths—and not the so-called plasmodermata of Batson and Held. The discovery of the plasmodermata was based upon poorly stained specimens. Certain non-nervous tissues are found but are of secondary importance. From these results the author suggests discarding the term "plasmoderma" as unnecessary and misleading.

WHEELER (Oregon)

221. JOHNSON, S. E. & MASON, M. L., The first white ramus communicans in man. *J. of Comp. Neurol.*, 33, 1921, 77-84.

Textbooks and current literature lack agreement concerning the occurrence of a white ramus communicans in connection with the first thoracic spinal nerve. This has undoubtedly been due to the fact that the location of these nerves may vary from individual to individual. The authors found one or more white rami communicantes arising from the first thoracic spinal nerve in several laboratory bodies as well as in fresh autopsy subjects. As a rule these rami connected with the stellate ganglion and contained a relatively high percentage of medullated fibers. Thus it would seem that if the first white rami actually does arise from the higher spinal nerves such a condition is unusual.

WHEELER (Oregon)

222. JOHNSON, S. E., An experimental study of the sacral sympathetic trunk of the cat with special reference to the occurrence of intrinsic commissural neurons. *J. Comp. Neurol.*, 33, 1921, 85-104.

In twelve cats the sympathetic trunks were divided between the 7th lumbar and the first sacral ganglion. In two of these cats operations a week later were performed in order to remove the source of any dorsal root fibers which might reach the trunk through the sacral gray rami. From 25-30 days were allowed for nerve

degeneration. The cats were then killed and sections from the sympathetic trunk thus affected were prepared for microscopic examination. The lower sympathetic trunk ganglia possess a rich intercellular plexus probably similar to a corresponding plexus in the higher trunk ganglia. This plexus disappears upon descending degeneration of preganglionic axones. It must therefore be formed by the terminations of preganglionic efferent axones which run to the trunk through the lower white rami. An unexpectedly large number of undegenerated fibers remained after the first operation; these fibers evidently reached the trunk by way of the gray rami since most of them degenerated upon the second operation. No evidence of commissural neurones was found.

WHEELER (Oregon)

223. LANDACRE, F. L., The fate of the neural crest in the head of the urodeles. *J. of Comp. Neurol.*, 33, 1921, 1-44.

The dorsal portion of the neural crest gives rise to general cutaneous and visceral portions of the 5, 7, 9 and 10th cranial nerves and also, in part, disintegrates to form mesenchyme. This mesenchyme becomes mingled with entodermal mesenchyme. The ventral portion of the neural crest furnishes mesenchyme for the ventral head and branchial regions. No evidence is found that lateral ectoderm furnishes mesenchyme, as was for a time believed. The mesenchyme furnishes material for cartilage and similar structures.

WHEELER (Oregon)

224. COOK, M. H. & NEAL, H. V., Are the taste-buds of elasmobranchs endodermal in origin? *J. of Comp. Neurol.*, 33, 1921, 45-63.

Rather doubtful has been our knowledge in the past concerning the origin of taste-buds in vertebrates. While morphologists have generally held that sense organs are ectodermal in origin it has long been known that the tissues in which some of these sense organs develop are of endodermal origin. Examinations of sections of *Squalus* (dogfish) embryos indicates that the whole pharyngeal cavity is endodermal in origin. In spite of arguments to the contrary the authors find that taste-buds in *Squalus acanthias* are

derived from endoderm. There is no indication of an inward migration of ectoderm which would warrant an assumption that the taste-buds are thus derived.

WHEELER (Oregon)

3. SENSATION AND PERCEPTION

225. HARTRIDGE, H., The Ear as Morphologically an Apparatus for Perceiving Depth below Sea-level. *J. of Physiol.*, 1920, 54, 244-247.

Based on a mechanical analogy between the auditory apparatus of mammalia and the depth controlling gear in the naval torpedo and the fact that in certain fish ossicles are found connecting the internal ear and the swim bladder, the view is advanced that the auditory apparatus of mammalia is a device for perceiving the depth below sea level rather than sound vibrations. If the view is correct it would explain why the cochlea, the semi-circular canals, and the otolith organs are associated anatomically and have a common nerve, since if the cochlea perceives depth below surface, all three would be directly concerned with the perception of position and the control of direction.

ANDERSON (Yale)

226. HARTRIDGE, H., Note on the Sense of Smell. *J. of Physiol.*, 1920, 54, 39-41.

ANDERSON (Yale)

227. PRADINES, M., La vraie signification de la loi de Weber. *Rev. Philos.*, 1920, 90, 393-431.

The mysterious and interesting part of the phenomenon reported by Weber is not the consciousness of difference between two amounts of stimulus, but the fact that we are *unconscious*, for so long, of any change. The law should be stated, "Our unconsciousness of intensity increases with the intensity." This phenomenon is not explained by any of the interpretations thus far proposed. It is not a different awareness of external increasing differences (Hering); nor a similar awareness of similar external connections (Brentano); nor a similar awareness of external increasing differences (Fechner). It is not awareness at all, but absence of awareness; and in proof of the fact that this lacuna of consciousness endures as long as

the stimulus increases is the remarkable fact which neither Hering nor Brentano remark and which Fechner conserves only by distorting it.

Consciousness does not passively register the increments. It exerts some kind of an activity toward them; the exact nature of which must be investigated through a study of the limits and so-called exceptions of the law.

KITSON (Indiana)

228. BEAUNIS, H., Les aveugles de naissance et la monde extérieur. *Rev. Philos.*, 1921, 91, 15-74.

How can blind persons secure certain ideas of spatial relationship, such as that of perspective? A device is suggested, consisting of a cube set in a frame so that it can revolve around one of its vertical corners as an axis. A blind person, holding his finger on a horizontal edge of the revolving cube, finds that he must let his finger go backward in the horizontal plane. He can translate this backward movement into terms of rightness and leftness by measuring with his other hand on a fretted horizontal scale attached to the frame.

With the help of such instruction, blinded persons (of whom war makes so many) might have access to a realm of enjoyment at present closed to them. They might enjoy reproductions of friends in profile and in relief, as seeing persons enjoy photograph albums. They might appreciate masterpieces of graphic art in relief. It is conceivable that they might even become painters, executing designs in relief as certain blind sculptors model busts.

KITSON (Indiana)

229. MANOIA, A. R., Sulla cenestesi, come oggetto di studio degli effetti delle sostanze ebrigene. *Riv. di Psicol.*, 16, 1920, 253-265.

The concept implied by the term *cenaesthesia* is vague even in its pathological variations. While all agree in regarding *cenaesthesia* as a complex of sensations derived from bodily modifications it is not clear whether one should understand by these modifications only those of which a clear consciousness is not had. Those taking up the study of this class of sensations should keep in mind the following considerations.

1. Variations of *cenaesthesia* can only be determined by the intensity of these sensations in the field of consciousness. Without

any special effort of attention they are sometimes perceived more clearly, sometimes less. Sensibility is increased in morbid states.

2. *Favorable or unfavorable dispositions* should be considered. These manifest themselves as pleasure or pain tendencies.

3. The *quality* of the sensations which are referable to sensations analogous to thermal, painful and tactile.

4. Some internal sensations become more clearly conscious when *localized* in a special region of the body.

ELRINGTON (Washington)

230. BONAVENTURA, E., Le illusioni ottico geometriche. *Riv. di Psicol.*, 16, 1920, 220-233.

The scientific importance of the study of optical geometric illusions lies in the fact that, among the phenomena of spacial perception, they show how complex is the mental work involved from which results our representation of the world. For the most part people believe it is only necessary to open the eyes to see things as they are,—nothing is more untrue. The phenomena with which the author deals are the result of complicated processes of elaboration integration, of interpretation, in themselves unconscious. They serve to show the synthetic activity which is characteristic of spiritual life.

ELRINGTON (Washington)

231. KIESOW, F., Osservazioni sopra il rapporto tra due oggetti visti separatamente coi due occhi. Trasparenza soggettiva gara e miscele delle impressioni di luce, lucentezza stereoscopica, contrasto binoculare. *Arch. ital. di Psicol.*, 1, 1921, 239-290.

Die Abhandlung bildet die fortsetzung der schon in fasc. I/II (p. 3) der gleichen Zeitschrift erschienenen ersten beiden Teile der Untersuchung:

Der stereoskopische Glanz. Nach einem historischen Überblick über die bis dahin auf diesem Gebiete erzielten Resultate und Ansichten, berichtet der Verfasser über seine eigenen Versuche, die ihn zu folgenden Hauptergebnissen führten: Der stereoskopische Glanz ist nicht abhängig vom Wettstreit der Lehfelder an sich, doch hat der letztere insofern eine Bedeutung für das Auftreten der Erscheinung, als durch denselben derjenige Moment bestimmt ist, in welchem die den beiden Augen dargebotenen Eindrücke einen

genügenden Grad von Unabhängigkeit gewinnen und demgemäfs hinreschend gegen einander kontrastieren. Jenseits jener Grenze tritt eine vollkommene Verschmelzung der hindrücke auf, diesseits derselben Mischung mit zunehmendem Wettstreit und sich stetig verstärkenden Glanze. Das Auftreten des Glanzes ist ausser dem insofern von der Form der dargetotenen hindrücke abhändig, als dieselbe die Unabhängigkeit der letzteren steigert und eventuell zu Augenbewegungen Anlass giebt. Mittels der auf einer Augehängten Tafel beigegebenen Ringform erzielte der Verfasser die höchsten Stufen des Glanzes.—Bei chromatischen Enidrücken hängt das Auftreten des Glanzes von der Wahe der verwandten Farben ab. Die Farben mittlerer Wellenlänge (orangegebl, gebl und gelbgrün) liefern die stärkste Wirkung, weniger wirksam ist das Orange, noch weniger das Grün. Nach beiden Seiten hin nimmt die Wirkung weiterhin stetig ab, sodass die Farben grösster und geringster Wellentenge sich am wenigsten, wenn überhaupt, für das Hervortreten des Phänomens eignen. Der Verfasser sucht diese Tatsachen zu den zuerst von Fritjof Holmgren und in letzter Zeit vielfach näher untersuchten Aktionsströmen der Netzhaut in Beziehung zu setzen, welche Vorgänge freilich nicht die psychophysischen Prozesse als solche darstellen, wohl aber die letzteren regelrecht begleiten.—Der Verfasser geht dann auf die von Rood erzielten Resultate ein, die er teils bestätigt, teils erweitert. Namentlich ist es der bei Benutzung photographischer Bilder von Metallen in Stereoskop auftretende Metallglanz, den der Verfasser zum gegenstand ausgedehnter Beobachtungen macht. Er kommt zu dem Resultat, dass es sich hiebei um assimilative Vorgänge handelt.—Was die Erklärung des in Rede stehenden Phänomens betrifft, so ist der Verfasser der Meinung, dass es sich bei demselben in Wirklichkeit nicht wie beim gewöhnlichen Glanz um unvollkommene Spiegelung handeln kann, sondern dass in beiden Fällen vielmehr gleichartige psychologische Bedingungen vorliegen. Der stereoskopische Glanz ist ebenso, wie was vor seinem Auftreten sich zeigende Leuchten der Mischfarbe, nach dem Verfasser ein Produkt der psychischen Synthese.

Der binokulare Kontrast. Der Verfasser unterzieht die namentlich von Fechner mitgeteilten Beobachtungen einer neuen Untersuchung, er fügt diesen eigene Beobachtungen hinzu und unterwirft die von Ebbinghaus gegebene Erklärung einer eingehenden Prüfung. Er kommt zu dem Erzebnis, dass dieselbe für die in Rede stehenden Erscheinungen nicht genügen kann, dass diese vielmehr ein Zebiet

von Tatsachen darstellen, die im Allgemeinen den selben Regeln folgen, denen die Tatsachen des gewöhnlichen Kontraster unterworfen sind.

F. KIESOW (Turin)

232. KIESOW, F., 1. Un Fenomeno Rappresentativo Centrale.
2. Una Esperienza dimenticata. *Arch. ital. di Psicol.*,
1, 1920, 102-106.

Two notes, the first dealing with the effect produced by fixing monocularly a piece of iron wire or similar object against the clear sky and at the same time holding in front of the same eye a solid non-transparent body,—as the finger. This object instead of appearing broken or interrupted, as one might expect, is seen to be continuous. The origin of this phenomenon is considered to be centrally determined by a process of assimilation.

The second note contains a discussion of phenomena previously observed by Purkenje and later confirmed by Volkmann and Fechner. One closes an eye and with the other one looks at an evenly colored surface (a wall, the sky, piece of paper) without fixing any definite point. After a while it will be noticed that rivalry is set up between the two fields of vision of which one is dark (that of the closed eye), the other clear.

The experiment is a simple one and confirms the results of experiments related in a previous paper noticed here to wit that the rivalry in the achromatic series is slow.

ELDRINGTON (Washington)

4. FEELING AND EMOTION

233. LUNDHOLM, H., The Affective Tone of Lines: Experimental Researches. *Psychol. Rev.*, 28, 1921, 43-60.

The subjects were asked to draw the lines suggested by adjectives such as: sad, quiet, lazy, merry, agitated, furious, etc. The lines were classified in an attempt to determine the motor expression suggested by the stimulus-word.

YOUNG (Minnesota)

234. KANTOR, J. R., An Attempt toward a Naturalistic Description of Emotions (I). *Psychol. Rev.*, 28, 1921, 19-42.

Following are the section headings: (1) The Nature of Emotional Conduct; (2) The Systematic Analysis of Emotional Acts; (3) Some

Points of Contact between the Organismic Hypothesis and the James-Lange Theory; (4) Distinction of Emotions from Non-emotional Feeling Behavior; (5) Are Emotions Inherited?

YOUNG (Minnesota)

235. KANTOR, J. R., An Attempt toward a Naturalistic Description of Emotions (II). *Psychol. Rev.*, 28, 1921, 120-140.

In continuation of a previous paper the following section headings are presented: (6) The Utility of Emotional Behavior; (7) The Relation of Emotions to Instincts; (8) The Classification of Emotions; (9) Determining Conditions of Emotions; (10) Emotions in Animals and Infants; (11) Emotions and Expressions; (12) Summary.

YOUNG (Minnesota)

5. MOTOR PHENOMENA AND ACTION

236. COLEMAN, W. M., On the Correlation of the Rate of Heart Beat, Breathing, Bodily Movement, and Sensory Stimuli. *J. of Physiol.*, 1920, 54, 213-217.

Observations were made of the pulse rate in animals and men under varying conditions. Accord of rates is usual between heart, footsteps, and breathing. The heart will take up the rate of periodic movement or sensory stimuli (beat of a metronome, accented syllables of speech) within limits of 15% below and 30% above its own rate. Emotion, strong exertion, or unusual metabolic demands may prevent the accord of rates.

ANDERSON (Yale)

237. BRIGGS, H., Physical Exertion, Fitness, and Breathing. *J. of Physiol.*, 1920, 54, 292-312.

Physical work is found to be easier for unfit men when oxygenated air is breathed than when normal air is breathed, but no such difference is observed with fit men. A method of measuring fitness is described based upon the experimental fact that fitness is inversely as the divergence of the curves showing work done (abscissæ) and the exhaled CO₂ percentage (ordinates) (*a*) when the subject breathes oxygen and (*b*) when the subject breathes air. Tables are given setting forth the oxygen consumption of subjects

while working the ergometer, while walking and running, and while climbing a slope of 21 degrees.

ANDERSON (Yale)

238. PEPPER, S. C., The Law of Habituation. *Psychol. Rev.*, 28, 1921, 61-71.

The term "habituation" is applied to progressive changes in affective judgment, whether in the individual or in the social group. In the history of music, for example, we find a progressive liking for the more and more dissonant intervals. Similar "affective sequences" may be found in the history of architecture and poetry. Changes in appreciation can not be adequately explained by the conservative principles of imitation, fatigue and habit. The author believes that "habituation" has a continuous and a cyclic phase.

YOUNG (Minnesota)

239. Editorial. Is Lefthandedness a Sign of Inferiority? *J. Amer. Med. Ass.*, 1921, 76, 1010.

Four per cent. of our population are left handed. It is hereditary. Quinan, a recent investigator, suggests that left-handed people can not execute finely coördinated movements. He states that sinistrality is prevalent among the feeble-minded; that stammering occurs with a frequency of from three to seven times greater in "sinistrals" than in the "dextrals." High arterial tension is more common in the lefthanded, he says. The editor says it would be rash to accept Quinan's conclusions. In fact, he is inclined to believe quite the opposite.

SYLVESTER (Drake)

240. BERNARD, L. L., The Misuse of Instinct in the Social Sciences. *Psychol. Rev.*, 28, 1921, 96-119.

Bernard criticizes current conceptions of instinct commonly accepted by social psychologists. He points out that so-called instincts are really complex habit systems. Inherited mechanisms constitute the raw material upon which habit systems are built, in much the same way that the higher stories of a skyscraper are built upon the lower, and the lower in turn upon the original foundations.

YOUNG (Minnesota)

241. M. PONZO, La misura del decorso di processi psichici eseguita per mezzo delle grafiche del respiro. Processi di riconoscimento e denominazione. *Arch. ital. di. Psicol.*, 1, 1921, 214-238.

Die Arbeit steht in Zusammenhang mit der früher erschienenen Abhandlung des Verfassers: *Lui tempi di riconoscimento e di denominazione di oggetti e di figure in adulti ed in allievi delle scuole elementari* (*Riv. di Psicol.*, 1914, n. 1). In der vorliegenden Untersuchung bestimmt Ponzo mittels der phonetischen Reaktion die Zeiten für die Erkennung und Benennung von Gegenständen unter gleichzeitiger Registrierung der Atemkurve. In dieser Kurve zeigen sich innerhalb der Strecke, die vom Momente der Präsentation bis zur Benennung des Gegenstandes verläuft, mit grosser Deutlichkeit die hauptsächlichsten Phasen, aus denen sich der Gesamtvorgang zusammensetzt. Man sieht die Phase der einfachen Wahrnehmung, die der Erkennung und die des Suchens nach dem Namen, bezu. der Bildung desselben. Die erwähnten Veränderungen der Atemkurve haben für jede Versuchsperson etwas durchaus charakteristisches und blieben für dieselbe konstant, wenn der Reiz in einem bestimmten Momente der Atembewegung appliziert wird. Als günstigster Moment des Reizapplikation ergab sich für Ponzo nach vielen Vorversuchen derjenige, in dem die Inspirationsbewegung ihren Höhepunkt erreicht. Um die Dauer der genannten Phasen zu bestimmen, ersann Ponzo eine doppelte pneumatische Kapsel, die (zusammen mit den nötigen Hilfsapparaten) gestattet, die Zeitwerte in Federschwingungen auf Atemkurve selbst zu registrieren und von dieser direkt abzulesen. Vier dem Texte eingefügte Zeichnungen, sowie sechs auf einer besonderen Tafel beigegebene Pneumogramme illustrieren die Einzelheiten der Versuchsanordnung und der erzielten Resultate. Unterstützt ward die Untersuchung durch die Aussagen der Versuchspersonen, die in jedem einzelnen Falle protokolliert wurden. Die gewonnenen Ergebnisse bestätigen in anschaulicher Weise die Auffassung Wundts über den zusammengesetzten Reaktionsvorgang. Die Arbeit liefert ausserdem einen Beitrag zur Feststellung individueller Differenzen.

F. KIESOW (Turin)

6. ATTENTION, MEMORY AND THOUGHT

242. D'ALLONNES, R. Le mécanisme de la pensée: Les schèmes mentaux. *Rev. Philos.*, 1920, 90, 161-202.

81 A schema is the resultant of an abstraction, brought about by the elimination of some qualities and the preservation of others, leaving a symbol which may stand for the whole. There are two varieties—artificial, such as written characters; and natural, mere silhouettes or outlines, showing characteristic features. The essence of these schemas is the image, which may serve in five ways: as a simplified residual, a simplifying agent, a collective index, a collecting agent, and a discriminating agent.

The schema is the essence of all thought processes. This discussion attempts to show how it operates in apperception, judgment, conception, reason, with hints as to its place in imagination, personality and thinking done in specialized fields such as science and philosophy.

KITSON (Indiana)

243. THORNDIKE, E. L., On the Organization of Intellect. *Psychol. Rev.*, 28, 1921, 141-151.

Thorndike criticizes Spearman's theory of a general intelligence factor. Tables of correlations and intercorrelations, based upon army data, are presented; and the application of Spearman's criterion of a general factor proves to be adverse to his own theory.

YOUNG (Minnesota)

7. SOCIAL FUNCTIONS OF THE INDIVIDUAL

244. VOLLMER, A., A Practical Method for Selecting Policemen. *J. of Crim. Law and Crim.*, 1921, 11, 571-581.

Vollmer deplores the fact that the many duties imposed upon the modern police force detract from the fullest and most efficient exercise of its primary function, that of crime prevention. But until there is a better way of making appointments to the higher positions in the administration, and a better basis of selecting men who enter the force than that of physical tests or political affiliation, or even the slightly improved civil service examinations, one cannot approach maximal efficiency. Emphasis must be shifted to a new set of values, from mere brute strength to vigor, intelligence, tact, courage, self-control and loyalty to the job. Needless to say, nothing less than expert service in conducting these physical, educational and psychological examinations should be employed.

The appended report of Dr. Bali exemplifies a method such as is recommended by Vollmer. Candidates are given a preliminary and qualifying examination, the more obvious misfits being rejected on the first test. The qualifying examination rates the candidates in five fields, physical, nervous, mental, personality and general. The scheme for rating is similar to that used in the army, but here results are arrived at by actual examination, not by a man to man comparison. The laboratory report covers recommendations as to the disposition of the candidate, together with an individual vocational guidance chart, illustration of which is given.

SCHWESINGER (Radcliffe)

245. TRAMM, K. A., A Study of the Scientific Aspects of Work-tools and Working Facilities. *Praktische Psychol.*, 1921, 2, 179-186.

It is denied that practice and experience, trial and error result inevitably in the proper tools and working facilities for certain kinds of activities, either within or outside of industry. A careful study must be made involving in each case: (1) Material to be worked upon. (2) Form of the proper tool. (3) Purpose of the work. (4) The physical and mental make up of the worker. The latter is the only point in which present studies are thwarted or futile. Individual peculiarities and tastes are the chief factors here. Examples are given showing how very common and well established activities may be made much more effective by a study of the elements enumerated.

LINK (New Haven)

246. DURKHEIM, E., La Famille conjugale. *Rev. Philos.*, 1921, 91, 1-14.

The history of the family shows a constant tendency toward contraction. The "conjugal" family—the resultant of a contraction of the "paternal" family—consists of husband, wife, minor and unmarried children. To each member of this group pertain certain rights and obligations of a social and legal nature, which become more and more exclusively personal as the domestic communism of earlier types of family disappears. Although, in this shrinking process, the family loses ground, nevertheless marriage gains strength.

KITSON (Indiana)

247. GESELL, A., Vocational probation for subnormal youth
Ment. Hyg., 5, 1921, 321-325.

The author presents a proposed law relating to vocational probation of subnormal youth, devised under the auspices of the Connecticut Commission of Child Welfare. It is designed to care for the subnormal and delinquent youth who is capable of earning wages if his conduct and work are supervised. It involves the coöperation of the juvenile court, the public schools and the industries, and constant supervision by a probation officer. This proposal is in line with the modern tendency of welfare work away from institutional segregation toward local community control.

WHEELER (Oregon)

248. BIGELOW, E. B. Experiment to determine the possibilities of subnormal girls in factory work. *Ment. Hyg.*, 1921, 5, 302-320.

A special class of subnormal girls was organized in a rubber factory. They were taught to perform the simpler types of manual tasks; their mentality was tested; their case histories were investigated as far as possible; and their earning capacities were carefully watched. Although the experiment was not completed it yielded several valuable suggestions such as the following: the vocational training of subnormals should be carried on away from other workers; subnormal employees require not only longer training but a special type of training in which appropriate discipline can be exercised; the supervisor should understand the limitations of subnormal employees and should possess an unusual amount of patience and tact; every possible incentive must be used; each employee offers individual problems; improvement of state legislation in regard to subnormals is urgently needed; there should be a greater amount of coöperation between the state and industry in handling the subnormal who is not confined to special institutions. There is no more practical or less expensive method of providing for the large numbers of defectives who must remain in the community.

WHEELER (Oregon)

249. LINK, H. C., A Further Development of Employment Psychology. *J. of Applied Psychol.*, 1920, 4, 306-309.

Six hundred sixteen women who applied for clerical work were examined, 287 recommended by the psychological section were

hired; 137 recommended but not hired, 173 not recommended but hired. Of those recommended and not hired 35 wanted summer work only. In some cases the wages they demanded were above the starting rate for clerical work. Thus predetermined starting wages had eliminated some of the most desirable applicants. It showed that a system of flexible starting wages was highly desirable if the wages could be varied in accordance with the quantity and quality of the available labor supply.

MULHALL ACHILLES

250. FROST, E., Should Psychology Bake Bread? *J. of Applied Psychol.*, 1920, 4, 294-305.

At least two considerations may militate against the wise application of a science: First, the science may be so new and its conclusions in consequence so half-baked, that the premature utilization of them is of no value, or second, we run a liability of prejudicing the future of the science itself, so that subsequent researches are no longer as search for truth but are biases and opinions dictated by needs. The second result would be calamitous.

Is psychology sufficiently developed so that it may hope to offer its formulæ and conclusions as practical recipes toward the solution of human problems? What is the effect of success upon the science itself and those who carry its touch? The technique of the psychology laboratory is not sufficiently standardized to translate it effectively to industry. The major premise that human problems of industry are psychological is well established and industry has recognized it. The minor premise of application is lacking and will probably remain so until more men are interested in both the psychological and industrial background. Industry inclines to be over-practical, while the laboratory psychologist leaves out of account variables due to nationality of worker, history of management, etc., which vary with each industry. Industry needs the psychologist but he must come with his overalls on and be as eager to learn as to teach. "Underdone bread is sometimes worse than no bread and makes for indigestion. If the psychologist is to do any industrial baking, he must learn first to cook, for everyone knows, cooking is an art and its secrets lie outside of books."

MULHALL ACHILLES

251. STRONG, E. K., Job Analysis of the Manager in Industry. *Sch. & Soc.*, 1921, 13, 456-461.

In this article the writer points out the fact that many men are sent out to occupy important executive positions in industry, after having been prepared by college courses which have little practical bearing on the real needs of their positions. He draws attention to the fact that many such courses are added to a college curriculum merely by the judgment of individual professors who have no real knowledge of the types of training the various executive positions in industry require.

The writer also speaks of the desirability of all such courses being based on information which should be the result of a thorough job-analysis in every branch of industry. Men could thus be prepared for executive positions in industry by practical courses with definite aims concerning future needs. He says: "What is vitally needed is an extensive survey of the real conditions in industry, so that we may know the number of different types of executives in existence, what they have to do and what they have to know in order to perform their duties. . . . With such data before us we then would be in a position to overhaul our existing courses and develop new curricula specially adapted to the training of executives. . . . We should also be able to know the objectives to be accomplished by each course in a curriculum and to develop new courses to meet these objectives." The point is also made that when elements in college work are made similar to elements in after life then, and only then, will the average student get the benefit of a transfer of training.

HODGKINSON (Harvard)

252. TAMASSIA, A., Le determinanti psico-psicologiche dello scrittura. *Riv. di Psicol.*, 16, 1920, 335-338.

On the hypothesis that there exists a relation between handwriting and mental facts, it should be possible to use graphology as a means of investigating the psychology of the child. The author carried out experiments on persons varying in age from 7 to 60. The writing showed certain variations in the course of the experiments, but these are less marked in the seven-year-old child, and in those of advanced years. The greater amount of variation occurs between the ages of 12 and 17.

The psychophysiological determinants of handwriting form in the period between puberty and adolescence, in the age of emo-

tional preponderance, when temperament begins to develop. Hand-writing then begins to acquire its special physiognomy which will be maintained throughout life, and is due to the formation of its psycho-physiological determinants.

ELRINGTON (Washington)

253. FERRARI, G. C., Per l'orientamento professionale dei lavoratori. *Riv. di. Psicol.*, 16, 1920, 327-334.

The development of vocational psychology in America has been followed with considerable interest in Italy. The author has made a restricted application of the principles among the feeble-minded. With the end of the war it became urgent to introduce some system by which the worker could be improved on the lines which suit his innate dispositions. The work of reform should begin: 1st, in the school with the object of discovering, by scientific method, the native dispositions of the child, and of organizing these elements in every institution, elementary, superior or professional, so as to facilitate the adaptation of the man to his proper work. 2nd, in the workshop, with the analysis of the mechanical and mental conditions of each kind of work. 3d, By elevating the individual disposition of the worker, so as to establish the professional aptitudes which follow.

ELRINGTON (Washington)

8. SPECIAL MENTAL CONDITIONS

254. Moxon, C. Religion in the Light of Psychoanalysis. *Psychoanalytic Rev.*, 1921, 8, 92-98.

From the psychoanalytic point of view, religion may be described as a psychical flight from a dark and threatening reality. It is a regression to a more infantile way of life in which fantasy takes the place of reality and a loved or feared God takes the place of the loved or feared parent of childhood. Religious beliefs give a symbolical satisfaction for hidden impulses, lowly emotions, and primitive desires. They are not a product of reason but of repressed instinct and emotion.

God is a symbol of the parent. The childish attitude toward the parent is transferred to the symbol. This attitude is usually ambivalent, both love and hate. The mind projects its feelings

upon its symbolic object. Consequently the God is conceived as loving or hating his worshippers. He rewards and he punishes just as the childhood father did.

The intensity of a man's religious life will depend upon the amount of repressed libido that is available for sublimation. The person who has found satisfaction in a normal love life and in his work will have no energy to spare in this form of sublimation.

BRIDGES (Ohio State)

255. TOWNE, J. E., A Psychoanalytic Study of Shakespere's Coriolanus. *Psychoanalytic Rev.*, 1921, 8, 84-91.

This story of a bold warrior losing his life because so "bound to's mother" is clearly but a variation of the most essentially tragic of all myths, that of Oedipus. It is true the story has a historical basis, but both Plutarch and Shakespere departed widely from the earliest and probably the most authentic accounts, and in both cases the result has approached more nearly the characteristic Oedipus fantasy. As has been previously pointed out by Jones and Coriat, Shakespere's insight into human nature was so profound that he intuitively made use of much that psychoanalysis has since revealed. This is illustrated by examples from the play.

BRIDGES (Ohio State)

256. HUBBARD, L. D. A Dream Study. *Psychoanalytic Rev.*, 1921, 8, 73-83.

A young woman, an only child with a strong parent complex, subsequent to a disappointment in love, regresses to a homosexual level and develops a neurosis. The dream reported occurred during the course of her psychoanalysis. It is unique in its dramatic form, appearing in a prologue, four acts, and an epilogue. Its interpretation seems to corroborate Maeder's theory that a dream may concern itself not only with the regressive tendencies of the libido but with the progressive tendencies as well. Throughout the first half of the dream, regression is the main feature, but in the last half desire for proper adult adjustment and for improvement are represented. The dream not only recapitulates the struggles of the infantile libido but it also represents the attitude of the dreamer towards her present difficulties. It is wish-fulfilling but at the same time it is autosymbolic and confessional.

BRIDGES (Ohio State)

257. BARNES, H. E., Some Reflections on the Possible Service of Analytical Psychology to History. *Psychoanalytic Rev.*, 1921, 8, 22-37.

The new standpoint in history emphasizes the importance of psychological analysis of the personalities of statesmen and leaders, for it regards leadership as the product of two factors: a stimulating environment and a personality that can respond. Personality can be best understood from the psychoanalytic point of view; but psychoanalysis need not be limited in history to the interpretation of personal traits. Freudian mechanisms may also, perhaps, be applied to the interpretation of mass psychology. For example, was New England puritanism a psychic compensation for economic chicanery in smuggling and the rum-trade? And was Southern chivalry a collective compensation for sexual looseness and maltreatment of the negro?

The former more promising aspect of the new method in history is applied to an interpretation of the personal traits and public policies of Alexander Hamilton and Thomas Jefferson. Hamilton's love of order, authority, and centralization in government as well as his self-confident and reality-conquering personality are traced to the fact that he knew little of family life in his childhood and never experienced the restraining influence of a harsh father.

Jefferson, on the other hand, was the son of a severe and domineering father who had the boy in constant fear of him. This explains his constant feeling of inferiority, his sensitiveness to public opinions, and especially that hatred of authority and domination and love of individual liberty characteristic of Jeffersonian democracy.

BRIDGES (Ohio State)

258. CLARK, L. P., Unconscious Motives Underlying the Personalities of Great Statesmen and their Relation to Epoch-Making Events (I. A Psychologic Study of Abraham Lincoln). *Psychoanalytic Rev.*, 1921, 8, 1-21.

Adequate interpretation of historical events is not possible without psychological analysis of the traits of character and personality of the prominent leaders of the period. Such an analysis must take cognizance of the unconscious as well as the conscious motives of the individual, and must seek to explain overt adult traits by tracing their antecedents back to the earliest events of childhood.

This psychoanalytic procedure is applied to Abraham Lincoln. Most prominent among his personality traits were the depressive episodes from which he suffered at times during the greater part of his life. Such depressions are due to regressive introversion of the emotions whenever the individual is unable to adjust to reality. This regression is based upon an over-attachment to the parent of the opposite sex.

Lincoln's early attachment to his mother and afterwards to his stepmother and his dislike for his father are verified by his biographers. In his adult life these attitudes persist as unconscious motives which explain at least in part the following points: his regressive depressions, his failure to appear on his appointed wedding day in 1841, the general instability of his love life, his reaction against the authority and dominance of the church (father substitute), his chivalry and tenderness (mother ideal) to the weak and enslaved, his leniency to infractors of military discipline, and his attitude toward the erring South.

BRIDGES (Ohio State)

259. SCHILLING, W., The Effect of Caffein and Acetanilid on Simple Reaction Time. *Psychol. Rev.*, 28, 1921, 72-79.

Apparently these drugs tend to retard auditory reaction time, and to produce greater variability of response than sugar of milk which was used as a control.

YOUNG (Minnesota)

260. LODGE, O., Testimony to a Child's Impression of Fairies. *J. Soc. for Psychical Res.*, 1920, 20, 63-70.

Report of a case of a woman who, it is alleged, in her childhood talked and played with fairies. Her impression is that they are from four to six inches in height, iridescent, many colored and that they came to her only at night or when everything was quiet about her. Letters of confirmation of reports attached.

BROOKE (Pennsylvania)

261. E. R. GROVES, E. R. SPAULDING, W. A. WHITE, P. BLANCHARD, C. C. ROBINSON, I. L. PETERS. Round Table. Sociological Significance of Psychoanalytic Psychology. *Pub. Amer. Sociol. Soc.*, 15, 1920, 203-216.

Because psychology and sociology are closely related sciences the upsetting influence of psychoanalysis is very significant to the sociologist. Psychoanalytic psychology claims the discovery of a new technique of immense value in psychological investigation, the discovery of evidence which individual behavior discloses, of the difficulty of bringing man's instinctive cravings under social discipline, and bringing to light the preponderate importance of early childhood as the social destiny period of human experience. It leads us to see in mental disorders, delinquency, and industrial unrest the disastrous results due to the failure of the individual to achieve a working harmony with the dictates of the social regime. Some sociological problems suggested by psychoanalysts are: the interpretation of mob psychology in terms of repressions; the social sublimation of the tremendous mass of restless energy brought forth by mental conditions; the use of social propaganda so as to obtain greater opportunity for the constructive utilization of energy which will increase rather than diminish individual responsibility; the psychoanalytical study of the character and personality of great men; the investigation of the bonds which hold together the various subgroups of society; the intensive study of the pre-school age; the possible applicability to the social group of laws worked out in the study of the individual; the reconstruction of industry in harmony with the deeper emotions of the personality; the neuropathic basis of criminality; and the sublimation of sex cravings in work with employed boys.

HART (Iowa)

262. DOOLEY, L., A Psychoanalytic Study of Manic Depressive Psychosis. *Psychoanal. Rev.*, 1921, 8, 38-72, 144-167.

This study was undertaken with two purposes in view: first, to determine whether or not psychoanalysis could be applied to the severe cases of manic depressive psychosis with beneficial results, and secondly to trace the symptoms of the psychosis back to phases of character development and to the specific crises in the lives of the patients where the arrest of emotional growth occurred.

Five cases are described in detail as to symptomatology, history, and psychoanalytic treatment. The therapeutic results are doubtful, but suggest the importance of further application of the method.

The fuller personal history obtained through psychoanalysis gives some points of interest. Four of the five cases recorded reached puberty at an unusually early age, and all of them developed

sex repressions as a result of their mothers' failure to meet their needs at the critical time. Curiosity, doubt, and fear as to sexual problems arose early and were inadequately met by incomplete knowledge gained in a clandestine manner. Excessive bashfulness, lack of self-confidence, modesty, prudery, and incipient homosexuality were the usual results. In married life the patients were unhappy, sexually frigid, and in general maladjusted. If some normal persons have had similar unfortunate histories, they remain normal probably because they have inherited better integrated nervous systems, and have succeeded in finding means of sublimation.

The study also throws some light on the psychology of the psychosis. The wish-fulfilling nature of many of the delusions and irrational actions is apparent. These wishes are in direct opposition to the consciously endorsed desires of the patient who feels an inner compulsion to talk and act as he does. During the course of the disease the patient gradually regresses to a fulfillment of more and more infantile types of wishes and trends, but during this regression the contact with reality is never broken, and therein lies the differentiation of this psychosis from dementia precox. The manic depressive character is extroverted while the dementia precox character is introverted. The "Flight into Reality" of the manic attack is a defense reaction by which the patient is protected from the painful thought of his own fundamental inferiority. In the depressive attack the defense is no longer possible, and the patient is weighted down with the pain of acknowledged defect. The difficulty of psychoanalysis is due to the method of defense in the manic phase and to listlessness and inaccessibility in the depressive phase.

BRIDGES (Ohio State)

263. VAN TESLAAR, J. S., The Death of Pan: A Classical Instance of Verbal Misinterpretation. *Psychoanal. Rev.*, 1921, 8, 180-183.

The myth of the death of Pan is traced back to its original source in Plutarch's *De Defectu Oraculorum*. It is found that the form of the story there reported very probably originated in a misunderstanding on the part of a group of sailors of a line of ritual chanted by worshippers on the shore. Subsequently there was built up around this trivial incident one of the most formidable myths in medieval Christianity.

BRIDGES (Ohio State)

264. STRONG, M. K., A New Reading of Tennyson's "The Lotos-Eaters." *Psychoanal. Rev.*, 1921, 8, 184-186.

This poem is interpreted as the conflict of a dissociated personality. The neurotic seeks refuge from reality in voluptuous fantasy. In the Choric Song is pictured the conflict between indulgence and struggle, sensuality and rationalism, with the former winning. It is the story of a failure.

BRIDGES (Ohio State)

265. LAZELL, E. W. The Group Treatment of Dementia Precox. *Psychoanal. Rev.*, 1921, 8, 168-179.

The author describes a method of treating dementia precox patients in groups by giving them instruction relative to their fundamental instinctive nature and chief mental mechanisms. The instruction is given in short lectures or talks, and the material presented is largely the result of psychoanalytic investigation. The aims of the instruction are to lead the patient to an understanding of the subjective nature and origin of his symptoms, and to assist him to a better social adjustment by directing the instinctive demands into channels compatible with the herd law as well as the ego-ideal. It seeks to withdraw the regressing libido from the world of incestuous, narcissistic, and homosexual fantasy, and to redirect it into the world of reality and towards a heterosexual and altruistic goal.

For purposes of instruction only such patients as presented the same fundamental problem and were solving their difficulties in the same manner were included in the same group. From the psychoanalytic point of view, it was found that all cases of dementia precox can be placed in one or the other of two groups: the aggressive and the submissive. This classification, which corresponds roughly to the hebephrenic and paranoid forms respectively, is based upon the way in which the patient seeks to gratify his homoerotic cravings, and ultimately upon the nature of his Oedipus problem.

The talks were given in very simple language on the following topics: the fear of death, conflict and regressions, reactivation of infantile wishes, explanation of the most common hallucinations (accusing and defending voices), masturbation and narcissism, sublimation of the self-love, homosexuality and its rationalization, the feeling of inferiority and its causes, the usual causes of flight

from women (bars to heterosexuality), over-compensation for inferiority, the explanation of delusions, day-dreaming and its explanation.

Some results of the method are: (1) the patient is socialized with reference to fear of death and the sexual problem, (2) the fear of the analyst is removed and some patients request further individual treatment, (3) patients apparently absolutely inaccessible really hear and retain much of the material, (4) many patients show improvement and some apparently recover.

BRIDGES (Ohio State)

266. FORSYTH, D., *The Rudiments of Character. A Study of Infant Behavior. Psychoanal. Rev.*, 1921, 8, 117-143.

Since psychical development is continuous and uninterrupted from childhood to adult life, it may be assumed that there is nothing in adult psychology which is not derived from some childhood element. The complex is derived from the simple, and psychology should begin with the latter rather than the former. It is the aim of this paper to establish some of the main facts of infantile psychology, and to trace their development through some of the earliest stages.

There are three distinct stages in the early development of the infant mind: (1) the vegetive stage, contemporary with intrauterine life, after birth represented by dreamless sleep; (2) the nutri-excretal stage, immediately following birth, when the bodily needs must be supplied with the help of novel nutritive and excretory functions; (3) the stage of external projection, resulting especially from the addition of the cutaneous, visual, and auditory senses. This stage is not further considered in the paper.

In the nutri-excretal stage the placental functions are replaced by four new channels of communication with the environment: (1) the oral zone, (2) the urethral zone, (3) the anal zone, (4) the respiratory zone. Each of these zones, under the influence of its proper stimulus (milk, urine, feces, breath) produces feelings of pleasure and muscular effects. Simultaneously the tension in the zone is reduced to zero, gradually to rise again until the next stimulation produces the same result. The tension is painful, its relief pleasant; and the greater the relief the greater the intensity of the pleasurable feeling. The attitude the child develops toward

these four zones and the distribution of his interest among them are the fundamental determinants of his future welfare, health, character.

The affective concomitant of the vegetive state may be called "Vegetive emotion." It is a negative or passive state of perfect contentment. In the nutri-excretal stage this elemental affective state is differentiated into pleasure and pain. The pleasure-pain principle of Freud is thus not so ultimate as the Vegetive or Nirvana principle. The goal of regression is not merely to escape pain, but to escape both pleasure and pain in order to find the lost Nirvana. Sleep follows the removal of all physiological tensions. Persisting tensions (unsatisfied desires) are the bases of anxiety and fear.

In the further process of development, two emotions are differentiated: love and hate. Love is the feeling bestowed upon an object which relieves tension (gratifies desire); hate is the projection upon an object of the unpleasantness (anger) due to unrelieved tension. Hate always implies frustrated desire. Thus love and hate have the same objects (ambivalency). These objects are at first the stimuli for the nutri-excretal zones, especially the oral anal. If milk is the chief love-object, it leads to extroversion. The child is obliged to take an interest (through the mother) in the outer world. If feces becomes the chief love object, it leads to introversion, for there is no dependence upon the environment.

The effects of these early loves and hates upon character formation are very great and decisive. Oral love, with its impulse to ingest, results in aggressive and masterful behavior. Oral hate impels the removal (death) of its object, and is an important factor in the development of disgust. Anal love results in a passive, submissive character. Anal hate, with its tendency to withhold, results in obstinacy, stubbornness and parsimoniousness. An extreme development of the last two types and their frequent alternation (ambivalency) are found in the suggestibility and negativism of catatonic dementia precox.

BRIDGES (Ohio State)

267. Editorial—Psychoanalysis. *J. Amer. Med. Asso.*, 1921, 76, 317.

People are paying too much attention nowadays to their *minds*. An abnormal interest in the working of one's own mind produces either an introspective philosopher or a "common nut." When

the interest relates to a fascination for cogitation on things sexual, it is dangerous. We are flooded with books on psychanalysis; the movies picture it; theaters dramatize it; and churches have lectures on it. The craze promises to make the medical psychiatrist a very busy man.

SYLVESTER (Drake)

268. ASSAGIOLI, R., La psicologia e la scienza della sessualita. *Atti dell' Associazione di Studi Psicologia. Riv. di Psicol.*, 16, 1920, 211-220.

The scientific study of sexuality is a relatively recent development of psychology. The author outlines the more important aspects of the problem, such as the ontogenetic development of the sexual functions. The Freudian theory of infantile polymorphic sexuality and the group of problems which require investigation pertain to individual sexual differences. The author observes that the tendency of modern civilization is to assume an increasingly masculine character and raises the question of its advantages, especially in so far as it concerns the female sex.

ELRINGTON (Washington)

269. BORRINO, A., Della psicoterapia nell' enuresi essenziale dei bambini. *Riv. di Psicol.* 16, 1920, 189-198.

Physical treatment for enuresis in children produces but little effect. Psychotherapy gives better results. Various cases are reported in which an action on the psyche of the child resulted in cure.

ELRINGTON (Washington)

270. GUALINO, L., Psicofisiologia dei Fucilandi. *Riv. di Psicol.*, 16, 1920, 42-60.

A psychophysiological study by a military medical officer of soldiers condemned to be shot. The various emotions experienced in the hours just preceding the execution of the penalty are observed with great detail together with physiological observations on nervous, muscular and glandular activity.

The mental functions of the condemned remain intact until the last moment, though on account of the atonic physiognomy the contrary seems to be the case. Cardiac and respiratory phenomena indicate a prolonged cerebral activity,—as do also such signs as the dilation of the pupils, the hypus reaction.

The presence of mioctonic tremors, sensory anæsthesia associated with variations in reflex activity, lead to the hypothesis that the emotions act by means of a constriction of the medullary blood vessels, bringing on anemia.

The general paresis which develops may also be conditioned through general inhibition, lack of the psychic impulses necessary to sustain the body, thus setting up a spurious state of "astasia ataxia."

The spinal chord is the first to suffer a variation of its function, while the organ of thought continues to understand and to suffer.

ELRINGTON (Washington)

271. FERRARI, G. C., *Psicologia dei moribundi*. *Riv. di Psicol.*, 16, 1920, 101-107.

In this paper the author completes the observations of Gualino. With some remarks of a more general character concerning the psychology of the dying, and in particular of the dark moments of the soldier-deserter about to suffer the death penalty. The chief preoccupation of them centers around the mystery of the physical passage from life to death, and the chief agony is derived from the fact that this moment is irrevocably fixed. The fact that Gualino's observations are taken from a homogeneous material limits the general validity of his conclusions. One defect lies in the fact that Gualino does not take into account the reasons which led to the condemnation nor the type of individual condemned for desertion. Taken as a group they represent the average of the population even if some habitual criminals may be included. Fear, shock and other motives may be at the back of the act of desertion, rather than other motives, such as are shown by others who resort to devious methods of saving their lives and escaping as well from the horrors of the trench.

With suitable subjects, trained in the psychological method of introspection, it is possible to study cenæsthesia, using this method if the criteria previously mentioned are taken into account. Experiments could then be made on the effects produced by toxic substances administered in doses of various strength at different intervals of time, and under conditions which would exclude the possibility of interference due to other disturbances from other sources.

Finally the special individual sensibility should be taken into consideration, especially such as may constitute a constitutional or transitory diosyncrasy for any one of the toxic substances used in the experiments.

ELRINGTON (Washington)

9. NERVOUS AND MENTAL DISORDERS

272. LECLÈRE, A., Contribution à l'étude des "Régressions psychiques" (Examen spécial de l'aspect sexuel de ce problème). *Rev. Philos.*, 1920, 90, 203-272.

By regression is ordinarily understood that reversion to the days of youth which occasionally manifests itself in persons of advanced age. This consists not of a real "resurrection" of the past, but of a condition brought about by the prolongation of the past or by new circumstances which produce effects analogous to those produced by past circumstances.

This thesis explains the sexual irregularities that occasionally crop out in old age, which might be called (following Freud's infantilisms) juvenilisms. It explains the puerilities of mental maladies by assuming that the patient obtains a refuge or defense from undesirable present conditions by pretending that he is again a youth. It explains the more subtle mental phenomena in adults who otherwise pass as normal—for example, the vague reveries in which the majority of people pass most of their time. These reveries or wanderings of attention are really revivals of youthful phantasies. (We call them in extreme old age reliving one's youth.) Indeed, even the most sanely mature man must realize that his maturity is at best only artificial and intermittent. He is obliged to guard himself constantly, lest he regress prematurely into the stage of juvenile fancying.

Periods of "depression" may be regarded as regressions. The tendency at such times is to simplify life by avoiding the present, and is carried out by reverting to juvenility. Again, what is play in adults but a regression into puerilities of action and feeling? Likewise the adult love of literature, especially of the novel, is but the juvenile love of stories, more often than not looking toward a vicarious gratification of sexual impulses. Even the metaphysics of the day consists of a play with abstract ideas, "and to speak of play is to speak of youth." One has only to watch normal adults

in a crowd to see them retrograde in the direction of juvenile exaggerations, violences and states of suggestibility. Peoples *en masse* may also retrograde in phenomena like Bolshevism.

The ideal way to grow old is to mature normally. This is accomplished by absorbing in each period of growth the best elements of the preceding period. In order to provide a social *régime* conducive to this, provide for each age the development which is normal to it, constantly looking forward to a maturity which will contain as many good elements as possible of each stage of growth. Facilitate easy preservation of the good things of the past; for as races must lean upon their traditions for achieving future greatness, so individuals must be able to lean upon their past for evolving a noble maturity.

KITSON (Indiana)

273. RAWLINGS, E., The Intellectual Status of Patients with Paranoid Dementia Praecox. *Arch. of Neurol. and Psychiat.*, 1921, 5, 283-295.

This investigation, carried out for the purpose of ascertaining the intellectual status of apparently well preserved cases of paranoid dementia praecox, was chiefly concerned with memory and the higher associative processes. The cases were selected from among those patients of native birth who had completed the grammar grades or received a higher education, and showed an apparently normal preservation. Fifty patients were tested but only sixteen were counted as it was impossible to score the rest. In ascertaining the general level of intelligence the revised Yerkes-Bridges point scale was used. The tests for the higher and more complex phases of mental activity were as follows: (a) Kent-Rosanoff; (b) Controlled Association; *i.e.*, Pyle's part-whole and opposites tests, Woodworth and Wells genus-species test, and some computations; (c) Tests for imagination and invention (Ink Blot, Masselon's, Development Theme, Completion of the test of Ebbinghaus); (d) General and specific information. The sixteen selected cases scored by the Yerkes-Bridges point scale showed a general average of 76.5 points with a mental age of 11.6 and an Intelligence Quotient of 72. The tests for controlled and uncontrolled association, and those for imagination and invention correlated well with the above scores, giving the patients a general average of 11-12 years. The test for general and specific information showed a diminution in linguistic

fluency, patchy memories, ideation sterile in type, the tendency to deal with the concrete rather than the abstract even when the latter was indicated, and a general lack of flexibility in the use of mental equipment. In correlating the clinical with the pathological findings it was discovered that there was an impairment of mind of the volition, emotion, the higher intellectual faculties of memory, reasoning, and a deterioration in judgment.

B. J. JONES (Radcliffe)

274. LOWREY, L. G., An Analysis of Suicidal Attempts. *J. of Nerv. & Ment. Dis.*, 1920, 52, 475-482.

The writer makes an analytic study of 46 cases of attempted suicide by patients at the Boston State Hospital. In each case he gives the reason or reasons for the attempt, the methods selected, and the psychiatric diagnosis. The writer points out that a high proportion of dementia praecox patients attempt suicide, and it is therefore necessary to safeguard such patients even more than has previously been thought necessary. Out of the analysis of 46 patients; 16 were cases of dementia praecox; 9 were manic depressive types; 5 were cases of psychopathic personality; 3 of psychoneurosis, and the others were scattered cases. The writer also states that the number of cases of attempted suicide due to depression is unexpectedly low and indicates the need for guarding other than depressive cases against the suicide danger. The methods used by the 46 patients in hospital, in order of frequency were, cutting, gas, poison, drowning, hanging, jumping from a height, swallowing foreign bodies, strangulation, shooting, setting fire to clothing. The writer also points out that occasionally attempts at suicide were made by patients in order to gain notoriety and sympathy or to achieve definite ends. These patients, however, very seldom intend their attempts to be successful, and the suicidal mood usually succumbs to the distractions of their environment.

HODGKINSON (Harvard)

275. STRECKER, E. A., Mal-behavior Viewed as an Out-patient Mental and Nervous Clinic Problem. *Ment. Hyg.*, 5, 1921, 225-238.

Out-patient psychiatry has opportunity for vast expansion and with its growth there should develop a general recognition of

principles by which mental and nervous clinics shall be developed. While methods of treatment, diagnosis and prognosis in this field cannot be as standardized as in such fields as the eye, ear, nose and throat, certain policies can be adopted for the good of the movement as a whole. The chief principle which activates a clinic should be the study of mal-behavior, an investigation of its causes and an effort to correct its ill effects. By mal-behavior is meant any form of behavior opposed to good, normal, moral or average behavior—any form of behavior which lowers the morale, efficiency and progress of the individual, the family and the community. A second principle should be that the clinic be not highly specialized but highly generalized. Its duties and tasks are many. The author illustrates his points by reference to type cases due to physical causes, psychogenic factors, a mixed etiology, and to psychopathic inferiority.

WHEELER (Oregon)

276. SPAULDING, E. R. An emotional crisis. A description and analysis of an episode that occurred among psychopathic women. *Ment. Hyg.*, 5, 1921, 266-282.

This article describes an episode which took place among a group of inmates in one of the cottages of the Bedford reformatory. Five girls of various psychopathic types were the *dramatis personae* of a riot of emotion and excitement which lasted about 5 hours during the night. The conditions leading up to the riot had to do with defiance of authority, jealousy, excitement resulting from a play which the inmates had recently given and the resignation of a play-leader, and suspicion on the part of the five inmates. Contributing to the riot were such factors as the emotional instability of the group, lack of inhibitory power, exaggerated traits of character such as extreme sensitiveness, over-suggestibility, sullenness, and lack of intelligence. Aside from their general child-like characters and over-development of the elementary instinctive and emotional responses of love, hate, anger and jealousy these girls showed a hypertrophied herd-instinct. Complexes of various sorts including hysterical behavior based upon menstrual and other physical difficulties added their influence to the developmental causes. The episode demonstrates that the treatment of the psychopathic delinquent woman should be undertaken from at least four points of view: therapeutic, educational, disciplinary and that of their social organization.

WHEELER (Oregon)

277. POLLACK, H. M. & FURBUSH, E. M. Mental diseases in twelve states. *Ment. Hyg.*, 5, 1921, 353-389.

This study is the first attempt to use for comparative purposes the results of the uniform system of statistics of mental diseases which was adopted by the American Medico-Psychological Association in 1917. Males exceed the females in traumatic, syphilitic and alcoholic groups. Males also exceeded in the dementia-praecox group for reasons unknown. Women exceed in the somatic-disease and manic-depressive groups owing probably to the bearing and rearing of children. Women also excell in the involution-melancholia group. The rate per 100,000 population of first admissions to state hospitals was 69.9 for urban districts and only 37.9 for rural districts. Of the males having dementia praecox, about 74 per cent. were single; of those having general paralysis 60 per cent. were married; the percentage of women with general paralysis in the separated or divorced group is relatively high. Numerous tables deal with the distributions of different diseases in the two sexes; the rates of first admissions in the separate states; the distribution of diseases in the different states; the per cent. distributions of the principal psychoses of readmissions; recovery and improvement rates by states and by diseases and the like.

WHEELER (Oregon)

278. LURIE, L. A., Treatment of the Subnormal and Psychopathic Child. *J. Amer. Med. Asso.*, 1921, 76, 1386.

In order to diagnose and prescribe properly for a child showing delinquency in anti-social behavior, truancy, mental defectiveness, mental retardation or some other form of psychopathy, examiners must determine (1) the innate mental capacity, and (2) the make-up of the environment. Mental capacity is ascertained by physical and neuropsychiatric examinations, including a psychometric test. Some, fortunately not physicians, assert that a psychometric examination is all that is necessary. The Stanford-Binet is the most commonly employed. The self-styled psychoclinician overlooks deafness and visual defects, and depends only on responses to questions. Obviously all findings should be correlated by a physician. Study of the social, economic, educational and religious

factors composing the environment depend on the aid of a social worker. The child must be studied in a controlled environment which can be provided only in a Psychopathic Institution.

SYLVESTER (Drake)

279. IRELAND, M. W., The Achievement of the Army Medical Department in the World War, in the Light of General Medical Progress. *J. Amer. Med. Asso.*, 1921, 76, 767.

Salmon, Bailey, and Yerkes, through application of the newer findings of psychology found large numbers of weak, undeveloped and disordered minds. Mental defectives will be bad risks in any future army. Our prospective army school will train mind and senses to co-ordinate through vocational adaptation to suitable employments.

SYLVESTER (Drake)

280. LEAHY, S. R., and SANDS, I. J. Mental Disorders in Children Following Epidemic Encephalitis. *J. Amer. Med. Asso.*, 1921, 76, 373.

Epidemic encephalitis was at first regarded as an acute infectious disease, involving chiefly the central nervous system, running a more or less classical course and terminating either in death or complete recovery. It has been found, however, that many patients after an apparently complete somatic recovery, show striking forms of abnormal behavior. A group of children in the Psychopathic Wards of Bellevue Hospital were carefully studied. Apparently the disease's process had come to a standstill, but "their mental status was characterized by purposeless, impulsive motor acts, marked irritability, definite attention disorders, distractibility and changing variable mood, inadequate and inconsistent emotional reactions, marked insomnia and, in two cases, precocious sexual feelings and intense eroticisms." The writers believe that the replacement of diseased, destroyed nervous tissue by neuroglia scar tissue acts as a stimulating and undoubtedly as an irritating agent to the rest of the nerve tissue. These patients acted badly to drugs, so treatment was virtually limited to physical agents intended to give rest and to shield the diseased brain from irritating stimuli. Warm packs, cold packs, hydrotherapy, massage, and occupational therapy were found to be important agents in hastening convalescence.

SYLVESTER (Drake)

281. CRILE, G. W., The Mechanism of Shock and Exhaustion. *J. Amer. Med. Ass.*, 1921, 76, 149.

"The man in acute shock or exhaustion is able to see danger, but lacks the normal muscular power to escape from it; his temperature may be subnormal, but he lacks the normal power to create heat; he understands words, but lacks the normal power of response. In other words, he is unable to transform potential into kinetic energy." In exhaustion, the organism has lost its self mastery. Self-mastery is achieved only by the master tissue—the brain. Acute exhaustion may be caused by failure of functioning of the respiratory system, the circulatory system, the blood, the muscles, suprarenals, the liver, and the brain. The brain is the master tissue of the body. It is the most active energy-transforming tissue, and on it the body must depend for the transformation of potential into kinetic energy. The conclusion is that when we speak of exhaustion of a man, we mean exhaustion of his brain.

SYLVESTER (Drake)

282. SILK, S. A., Compensation Mechanisms of Delusions and Hallucinations. *Amer. J. of Insanity*, 1921, 47, 523-542.

In attempting to satisfy the biologic demands arising from the two basic impulses of hunger and sex, the organism has been forced into a struggle with various obstacles opposed by his environment. Satisfaction of these impulses is accompanied by a feeling of pleasure and dissatisfaction by a feeling of pain, and with both pleasure and pain are associated certain reflex physical phenomena such as changes in pulse, respiration, muscular tension. Pleasure, representing satisfaction of biological demands, becomes one of the chief aims of activity.

Two paths are open to the organism facing difficulty: first, fight, as a result of which anger has developed; and second, flight, as a result of which fear has developed. Through phylogenetic association, the same physical phenomena have come to be associated with anger as with pleasure, and those with fear as with pain.

Man has found it advantageous to live in a social unit, but in so doing, he has had to adapt himself to society's demands, satisfying his affective cravings in a manner prescribed by social custom. Since the adjustment and adaptation to the complex demands of society are chiefly at the psychical level, the struggle is chiefly there. Since the feeling of power has been necessary to keep up

the fight in overcoming obstacles of the social environment, the "will to power" has become a motivating force, and by phylogenetic association, accompanied by a sense of pleasure.

Gradually two mechanisms of defense have developed, representing efforts on the part of the individual to meet difficulties at the social level: first, day dreams and phantasies; and second, delusions and hallucinations. Since, however, the individual is thereby perceiving reality not as it is but in a way compatible with his desires, he is actually running away from reality and adopting flight rather than fight, a method which although it may temporarily remove the individual from danger, is not a constructive method of adaptation. Should man meet obstacles in the way of satisfying the demands of the sex impulse, he may overcome them at the psychical level by fight, wherein he endeavors to change social custom or repress those desires and wishes antagonistic to it, or he may adopt flight, through psychical substitution, thereby perceiving the environment in a way compatible with his wishes or conceive himself the possessor of such desires as may be approved by society.

Two cases are presented in considerable detail: to illustrate the compensatory mechanisms of delusions and hallucinations through which the biologically inefficient individuals attempt to adjust themselves to society.

The first is a soldier, 29, of effeminate voice and homosexual tendencies who saves himself the pain which would be caused by conscious knowledge of his inefficiency, by projecting his difficulties on someone else and developing definite ideas of persecution, thereby adopting the method of flight. He further compensates for his inferiority by accentuating his masculine appearance by growth of beard and moustache, by cultivating an air of superiority and making extravagant statements regarding his ability. It is further suggested that his joining the army, although consciously in order to assert himself and prove himself masculine enough to become a warrior, unconsciously was due to the fact that he recognized in the army, a means of gratifying his homosexual cravings.

The second is also a soldier, 27, who because of homosexuality, was impotent upon marriage. He too flees from the recognition of reality by projecting his difficulties upon his wife, accusing her of unfaithfulness. After leaving her, he wanders for a time and then joins the army, where his conflict is brought to consciousness in a more acute form and he becomes hallucinated, hearing his fellow soldiers call him vile names. Here the hallucinations are an

indication of his real cravings. After a period marked by withdrawal from reality, as the psychosis clears he protects himself from recurrent pain by perceiving himself not inferior and lacking in power to create, but as the Messenger of God, and hence above demands of the flesh. As he no longer needs projection mechanism of delusions and hallucinations they disappear.

In both cases, the nature of the delusions and hallucinations indicate mechanisms which have been developed to compensate for consciousness of inferiority due to homosexual cravings.

LOWDEN

283. MURPHY, G., A Comparison of Manic-Depressive and Dementia Praecox Cases by the Free-Association Method. *Amer. J. Insanity*, 1921, 77, 545-558.

The first part of the paper is a revision of the system of classification of responses for the free-association experiment reported in the *Amer. J. Psychol.*, 1917, Vol. 28, 248. Many classes have been dropped due to the personal equation involved in identifying them or to the infrequency of responses falling in those classes. Eleven principal classes remain, termed as follows: (1) Spatial Contiguity which includes only objective spatial contiguity as carpet-floor; (2) Similarity; (3) Coördinates; (4) Contrasts; (5) Common Pairs; (6) Subordinates; (7) Supraordinates. Class 8A includes responses naming a person or thing representative of the general idea of the stimulus when the stimulus is a noun and 8B the same when the stimulus is an adjective. Class 9 are responses naming the general idea of which the stimulus is representative, the opposite of class 8. Class 10 includes responses naming the substance of which the stimulus is composed. Class 11 includes noun-adjective associations. All responses not included in these eleven (about 35 per cent.) are grouped together as unclassified.

The second part of the paper discusses the records from the free-association experiment of 21 manic-depressive depressed, 12 manic-depressive excited and 13 dementia praecox cases and compares the two psychoses. The records of 4 general paresis cases were also studied. The records are made with the Kent-Rosanoff word list. No single type of association could be definitely associated with any one diagnosis. It appears that a wide discrepancy between the number of contiguity and adjective-noun associations is atypical of dementia praecox and a wide difference

between the number of adjective-noun and noun-adjective associations is atypical of a manic-depressive psychosis. The central tendencies of different types of associations were found to be significant. The median of the contiguity class for dementia praecox was 9 and for manic-depression 6 and the median of noun-adjectives for dementia praecox was 3 and for manic-depression 6. A study of the influence of age, sex and intelligence showed no special effect of these factors on the classes of associations. Comparison of the responses with Kent and Rosanoff's frequency list showed no important difference between the two psychoses. On the basis of these findings and on a further study of normal persons the following criteria were formulated: The presence of a large number of individual reactions is in general in favor of dementia praecox; the presence of individual contiguities is in favor of a diagnosis of dementia praecox if there is a question between manic-depression and dementia praecox; to give 8 or more noun-adjective associations is atypical of dementia praecox; to show a difference of 10 or more between the number of contiguities and the number of adjective-noun associations is atypical of dementia praecox; and to give 20 or more individual reactions is atypical of manic-depression.

The last part of the paper is a report of a brief attempt to devise a new word-list containing words of emotional coloring and words of such infrequent usage as to get beneath the verbal habits. Under these conditions over half the responses were synonyms. It is probable that unusual words operate principally to produce definitions.

KENNEDY (Radcliffe)

284. GODDARD, H. H., The Problem of the Psychopathic Child. *Amer. J. of Insanity*, 1921, 77, 511-526.

Child insanity has been overlooked in the past, due to a false theology, and to the fact that the study of man has been chiefly concerned with the full grown adult. It is now beginning to be realized that much of juvenile misbehavior is as surely due to a brain functioning badly on account of disease, as in similar conduct in the adult.

For two years the Ohio Bureau of Juvenile Research has been engaged in detecting juvenile psychopaths. The children when admitted are given the Kent-Rosanoff Association tests, the Binet

(Stanford Revision), and other tests such as Healy and Porteus. Some standardization of psychopathic indications has been worked out from the laboratory findings. The range above the basal year in the Binet more than four years, is one indication. Distribution in the Binet shows that the psychopath is apt to be poor in memory, in association, and in the weights, while good in comprehension and reasoning. The psychopath gives peculiar and individual reactions, interpolating peculiar things in reading, and giving nonsense syllables when giving sixty words in three minutes. Such a child gives more than ten individual reactions in the Association tests, or more than ten reactions which are abnormal according to the Kent-Rosanoff definition. An age norm for the various performance tests differing by more than four years is another indication. Other factors are exceptionally poor or good orientation, extraordinary ability in school work, lack of coherence in the child's own story, behavior in the examination showing peculiar emotional reactions, lack of adaptation, or excitability.

The personal history facts which indicate psychopathy are as follows. The children may be more or less solitary, and not able to get along well with children of the same mental level. Their games may have a queer monotony. They may have strong likes and dislikes as regards food. They may have violent tempers, and may be moody, depressed, or "exalted." In their school work, they are relatively poorer in spelling and geography than in their other subjects. The teacher finds them difficult to handle, as she cannot rely on them, and does not know how to cope with their peculiar misbehaviors.

Some of these children grow better as they grow older; another group grow up to become nervous unstable men and women, becoming delinquents and anti-social members of the community. A third group grow progressively worse, finally becoming distinctly insane. Curing or preventing this condition is a pressing problem. For some cases, anti-syphilitic treatment has been administered, but no marked results are reported. For the others, special hygienic measures, firm discipline, conditions making for happiness, is advised.

PROUTY (Wellesley)

285. GREGG, D., Plots in Psychiatry. *Amer. J. of Insan.*, 1921, 77, 517-522.

The author finds that often a diagrammatic method of explaining ideas dealt with in psychiatry is more illuminating than a word

picture, both for those to whom the explanation is being made and for the one who is attempting the explanation. In psychiatry will, intellect and emotion are considered the three chief fields of mental activity. These three fields vary according to increased or decreased activity or lack of activity. In mental and nervous diseases intellect and emotion are primarily involved, and will, only secondarily. The plans for charts do not therefore consider the will. The first chart represents the degree of emotional reaction of different individuals to a given stimulus. The reaction is expressed chiefly through the vegetative and sympathetic nervous systems. In the normal person a stimulus produces a corresponding emotional reaction; in the neurotic, an excessive reaction, and in the psychotic, a diminished reaction. In analyzing emotions we find them of triple origin: from the body, from the mind and from the environment. The next charts show individual variation with regard to these three emotional sources. The chart of each person is in the form of a column divided into three segments which vary in size according to whether his emotions are derived chiefly from the environmental, psychic, or somatic field. For example, the neurasthenic would be represented by a column longer than that of the normal person, indicating greater emotionality in general, and with a particular augmentation of the somatic segment. The chart of the psychaesthenic shows an augmentation of the psychic segment.

In the next chart intellect and emotion are plotted in parallel lines. The distance between the two lines measures "morale." The convergence of the two lines indicates an abnormal heightening of emotional activity at the expense of the intellect. If they cross, emotion has become the guide, instead of intellect. A second method of plotting the relationship between the intellect and emotions is that which uses coördinates. Here we have an intellectual and an emotional zone. An individual starting at zero, presumably in childhood, lives a life in which the emotions and instincts predominate as governing factors. Later in life the intellect normally becomes the guide of activities, and from then on the curve should swing further and further away from the danger line where the emotions predominate over the intellect. In a highly emotional person the curve would not swing far from the emotional area. With a hysteric there would be abrupt excursions into the emotional field.

HINCKS (Radcliffe)

286. PORTEUS, S. D., A Study of Personality of Defectives With a Social Ratings Scale. *Publ. Training School at Vineland, New Jersey*, No. 23, 1920, 1-22.

Intelligence tests alone are inadequate for the diagnosis of high grade feeble-mindedness because they are unable to guarantee social inefficiency, which is after all the final criterion. To be fit for the community the individual must have some capacity for self-management and self-control. Porteus has devised a social ratings scale for the measurement of these qualities to supplement the Binet and Porteus Scales, based upon 125 mental defectives at the Vineland Training School. Very few of these have ever been tried in the community, which is unfortunate, as the author admits.

A list of traits, characteristic of the social aspects of feeble-mindedness, was gathered from the descriptions by leading authorities, and from the author's experience. Three judges were then asked to indicate which traits were characteristic of each of the 125 cases. The list was reduced, and the traits finally considered were lack of planning ability, lack of initiative, irresolution, nervousness, silliness, impulsiveness, moodiness, bad temper, imprudence, cunning and simplicity. Each case was then ranked according to Scott's System with army personnel, but upon a three instead of five point basis. Everyone was also ranked upon an estimate of his general social fitness. The ratings for each trait were correlated singly with the general social estimate. As a result of the correlations, cunning, deceit, impudence, disobedience and bad temper were eliminated, not because they are not characteristic of defectives, but because they appear not to affect social fitness adversely. Each trait was correlated with every other, and then each characteristic was weighted to obtain an individual index of social fitness. Correlation coefficients were found between the Binet and Porteus Scales and the Social Ratings Scale. Neither the Binet nor Porteus alone correlated as highly with it as did the average of the two together. These statistics seem to indicate that after all mental tests are a fairly reliable index of social adaptability.

HINCKS (Radcliffe)

287. BELLAVITIS, C., Un caso di Microcefalia. *Riv. di Psicol.*, 16, 1920, 290-306.

The physical and psychological characters of a case of microcephaly are given in detail. Psychologically, the subject shows no

antisocial tendencies. He is a deaf mute, and deficient in senses of taste and smell. Cutaneous sensibility normal. Fundamental notion of space and quantity are wanting. While able to distinguish colors fairly accurately, is unable to discriminate between different weights. The memory is well developed, but on account of the lack of words, processes of association and abstraction and the formation of concepts and ideas is difficult. Relation of cause and effect is apparently understood but does not extend to analogies.

ELDRINGTON (Washington)

10. INDIVIDUAL, RACIAL AND SOCIAL PSYCHOLOGY

288. MARSTON, W. M., Psychological Possibilities in the Deception Tests. *J. of Crim. Law and Crim.*, 1921, **11**, 551-570.

The four types of psycho-physiological tests are the galvanometer test, the association reaction-time test, Benussi's breathing test, and the systolic blood pressure test. The galvanometer test registers practically all emotions so that it is impossible to distinguish those caused by deception; the value of the association reaction-time test is limited because of the difficulty in getting crucial and non-crucial words; Benussi's test is of little value because testimony cannot be broken up into isolated statements. The systolic blood pressure test, however, has given "100 per cent. accuracy of judgment under very difficult conditions." In this test, the witness' blood pressure is taken from time to time while he is cross-examined either by the blood pressure operator or a second operator called the examiner. "The effectiveness of the test depends almost entirely upon the construction and arrangement of the cross-examination and its proper correlation with the blood pressure readings, a system of signals between the examiner and the blood pressure operator being necessary. . . . The form of the blood pressure curve as correlated with the cross-examination . . . is found to indicate with surprising accuracy and minuteness the fluctuations of the witness' emotions." Twenty criminal defendants were tested by the blood pressure, breathing and association tests. The author's conclusions were that the blood pressure test is valuable in determining the truth of the individual's story, in sometimes bringing about confessions not made during cross-examination, and in supplying new clues by the discovery of unsuspected guilty emotions. Thirty-five soldiers were examined

at Camp Greenleaf by the blood pressure test. The results show the test has "practically absolute reliability" when given by an expert, although the results of non-experts cannot be relied upon entirely. The writer's general conclusions are that there is sufficient psychological background to qualify an expert upon deception, and that the use of deception tests in court is justified.

GAW (Boston Psychopathic Hospital)

289. WILLIAMS, F. E., Mental hygiene and the college student. *Ment. Hyg.*, 5, 1921, 283-301.

The problem of the mental hygiene of the college student is a neglected one. In our universities emphasis has always been placed upon quantity of "brains" rather than upon "quality" or at least that "quality" which controls and directs our lives. Since Universities are free from feeble-mindedness and insanity except in very rare instances, and since mental hygiene was thought to be vague and intangible, little attention has been paid to the mental health of students in college. The college student undergoes many emotional and intellectual changes which may effect not only his college career but his whole life. Some of his problems are those of friendship, attitude toward his family, morals, social views, proper physical care, success in his studies. One of the worst evils of university life is the danger that students develop an exaggerated feeling of inferiority. Thus the emotional life of the student must be made a subject of study by university officials. Emotional as well as physical health should be a part of the college program. A program of mental health and hygiene will forestall many intellectual failures, failures in the form of nervous and mental diseases either immediate or remote; it will raise the standard of intellectual achievement by reducing the amount of inadequate mental adjustment, mental inefficiency and unhappiness.

WHEELER (Oregon)

290. SINGER, H. D., The possibilities of a state society for mental hygiene. *Ment. Hyg.*, 5, 1921, 342-352.

The functions of such a society are educative rather than legislative. Its chief duty is to disseminate information and propaganda which will work toward the preservation of mental

health and the prevention of mental disease. This function involves suggesting methods for the recognition of early signs of mental breakdown or abnormality, active work in bringing about the establishing of local clinics in all communities, efforts to bring about a realization on the part of the public of the needs for and the usefulness of such clinics, and the like.

WHEELER (Oregon)

291. BLUMGART, L., Observations on maladjusted children. *Ment. Hyg.*, 5, 1921, 327-341.

Report on the work of the Children's Clinic for 1917-1918, Department of Psychiatry, Cornell Medical School. Such a clinic is of special service in bringing about the proper handling of children who are called "nervous" or "difficult" to deal with but who are neither feeble-minded nor malignantly psychotic. Physical defects are corrected; the child is often reeducated, the attitude of the home toward the child is changed; or where the children are sufficiently neurotic or where home conditions are sufficiently irremediable the children are sent to a farm-school. It turns out that at the end of two and one half years improvement in the behavior of maladjusted children seems to reach a stage of permanence in at least 50 per cent. of the cases.

WHEELER (Oregon)

292. LICHTENBERGER, J. P., Social Significance of Mental Levels. *Pub. Amer. Sociol. Soc.*, 1920, 15, 102-124.

The theory of mental levels established in the measurement of intelligence in the feeble-minded and confirmed by experience with army mental tests with 1,726,966 men, possesses a degree of validity which requires recognition in the field of social interpretation. Among the fundamental postulates of the theory are: There is a normal symmetrical development of intelligence corresponding to physical growth, with symmetrical deviations both in acceleration and in retardation. It is now possible to measure these deviations and to classify the population on the basis of the degree of intelligence. Objections and criticisms arising from the low average mentality shown by the army mental tests result primarily from failure to realize that the brain and nervous structure which determine mental development mature at fourteen to sixteen years of age, and that intelligence must be distinguished from knowledge.

It is recognized of course that intelligence is not the only test of social efficiency, but that emotion, temperament, character, etc. are important. It must also be recognized, however, that as a rule exceptional abilities in any line are correlates of intelligence.

Assuming a population of 100,000,000, it is estimated that we have 10,000,000 persons of very inferior intelligence and 4,500,000 of very superior intelligence, with a normal distribution between these extremes. This distribution of the population into mental levels must be taken into account in considering such industrial problems as wage levels, vocational guidance and labor turnover, such educational problems as retardation and acceleration, the problems of delinquency and dependency, the contrast between races, and the possibilities of democratic government.

HART (Iowa)

293. HUMPHREY, S. K., The Menace of the Half-Man. *J. of Heredity*, 1920, 11, 228-232.

Half-men (the feeble-minded and morons) are multiplying twice as fast as the mentally normal. Only ten per cent. of the feeble-minded are in custodial institutions. To prevent race degradation it is suggested that the unfit should be weeded out in the schools and should be isolated or sterilized.

FRANZ (St. Elizabeths)

II. MENTAL DEVELOPMENT IN MAN

294. WESTFALL, W. I. A., Some Examples of Coefficients of Correlation. *Sch. and Soc.*, 1921, 13, 359-360.

Although the coefficient of correlation has given very fruitful results in biometry it has been misused in educational investigations because the form of the frequency curve, on which it depends, has not been standardized. If it is to be really valuable there should be a generally accepted curve of distribution of grades and enough computations made on this basis so that the numerical value of any coefficient will have real significance. At the University of Missouri, under the author's direction, studies were made of the grades of certain subjects required of students in engineering. A uniform system of grading was used and the correlation was based on a distribution approximating the error curve. The probable errors were small so the coefficients of correlation are significant. They

decrease as the time between the taking of the two subjects increases. For example, the correlation index between English and Trigonometry, which were taken simultaneously, is .45-.022; between English and Analytics, which were consecutive courses, .40-.025; between English and Differential Calculus, when one semester intervened, .33-.033; and between English and Integral Calculus, when two semesters intervened, only .19-.039.

KENNEDY (Radcliffe)

295. THORNDIKE, E. L., Equality in Difficulty of Alternative Intelligence Examinations. *J. of Applied Psychol.*, 1920, 4, 283-288.

Certain facts of general interest found in investigations made to secure equal difficulty in the alternative forms of the Intelligence Examination arranged for use by colleges are reported. Forms A, E, J, L and N are approximately equal, C and I are about 1 per cent. easier, F, K and M about 1 per cent. harder, H is about 3 per cent. easier, D about 5 per cent. easier, G and O are about $2\frac{1}{2}$ per cent. harder, B is about 5 per cent. harder.

E. MULHALL ACHILLES

296. BURTT, H. E. and ARPS, G. F., Correlation of Army Alpha Intelligence Test with Academic Grades in High Schools and Military Academies. *J. of Applied Psychol.*, 1920, 4, 289-293.

The correlation of Army Alpha with academic marks in high schools and military academies yields an appreciably higher correlation for the latter group. This suggests to the authors that methods of instruction in the military academy are more apt to hold the student to his maximum intellectual ability. The low correlation generally found between intelligence and academic marks may be to a considerable extent due to the fact that methods of school instruction do not hold students to their maximum efficiency.

E. MULHALL ACHILLES

297. STERN, E., The Natural Course for Training Children of Primary and Pre-primary Age. (The Montesson Method) *Praktische Psychol.*, 1921, 2, 161-169.

Children beginning school undergo a transition from a very spontaneous kind of home training to a kind of training which is highly artificial and mechanical. Therefore, steps should be taken to make the first years of school life correspond more closely with the natural development of the child. The Montesson method is described, from a psychological viewpoint, as one attempt to base primary education upon the processes characteristic of early childhood.

LINK (New Haven)

298. PIORKOWSKI, C., The Principles of Selection in the Berlin Examination for Children of Conspicuous Talent. *Praktische Psychol.*, 1921, 2, 186-188.

A plan for furnishing special educational opportunities to the children of the common schools whereby, annually, 150 pupils who are recommended by their teachers, are given a psychological examination. The choice is based upon the combined results of scholastic standing, personality, and success in the tests—with special reference to conspicuous superiority in any one of the three phases.

LINK (New Haven)

299. HORN, E., The Selection of Silent Reading Text-books. *J. Educ. Research*, 1920, 2, 615-619.

A plea is made for the consideration of two additional factors involved in silent reading besides speed and comprehension, namely, ability to organize what is read and the mastering of a memory technique.

It is suggested that book companies develop silent reading manuals, the outstanding characteristics of which should be these: (1) They should be rich in factual and informational data; (2) The content of the selections should be worth while; (3) Most of the selections should be of sufficient length; (4) Some selections should contain data given in great detail; (5) Some selections should be preceded by guiding problems; (6) Each selection should be followed by appropriate comprehension tests and tests to measure organizing ability; (7) The book should contain an excellent index and table of contents; (8) The mechanical make-up of the book should be good.

KOHS (Portland, Ore.)

300. DICKSON, V. E., The Use of Group Mental Tests in the Guidance of Eighth-Grade and High-School Pupils. *J. Educ. Research*, 1920, 2, 601-610.

Acknowledging wide variations in mental power, it is emphasized that proper guidance and classification of entering high-school pupils is absolutely essential. This differential treatment can be determined after utilizing group tests, such as the Otis.

An experiment is described explaining the progress of two selected groups of eighth-grade pupils, one an "accelerated group," the other a "regular group," who passed through the eighth-grade and first year of high school. The conclusions are that "this experiment gave us evidence that there was mental capacity in many a child that could easily be used to net that child returns in acceleration without endangering scholarship. It also indicated that superior mental capacity was a greater guarantee to good scholarship than was the mastery of all the items in the course of study of the previous grade." Nevertheless, care is taken to emphasize that the group intelligence test is not an infallible guide, but serves merely as an important tool in selection and guidance.

KOHS (Portland, Ore.)

301. DAWSON, C. E., Educational Measurement in Grand Rapids. *J. Educ. Research*, 1920, 2, 611-614.

Self-surveying illustrated. Educational measurement in this city was entered upon in order to classify children "according to mental levels and accomplishments, and to stress instruction where it is needed."

KOHS (Portland, Ore.)

302. PRESSEY, L. W., Scale of Attainment No. 1—An Examination of Achievement in the Second Grade. *J. Educ. Research*, 1920, 2, 572-581.

This article describes a group test for measuring the attainments in the fundamental subjects of second grade children. This limitation was a planned one for the reason, first, that the concrete nature of the subject matter of this grade made test formulation relatively easy, and second, because it is in this grade that the first serious attack is made upon the "tool subjects."

The scale consists of four tests: spelling, reading vocabulary, arithmetic (46 addition, 30 subtraction combinations), and silent

reading. The time allotment for the complete test is 25 minutes. The scoring is easy and objective. Norms are presented based upon the results of 320 second-grade children in three cities.

KOHS (Portland, Ore.)

303. GAULT, R. H., Picture Completion. *J. of Applied Psychol.*, 1920, 4, 310-315.

An attempt was made to score picture completion records obtained from 118 delinquents. The I. Q. of 74 of these 118 were almost uniformly distributed over the range of 65 to 79.9 inclusive. In the completion test there is a possibility of 369 moves. The 118 cases made 360 of them as opposed to 349 made by Pintner and Anderson's normal subjects. Arbitrarily a value of 100 was assigned to certain parts (pictures) in the test. The remaining 61 situations were turned over to each one of eight instructors or advanced students with the request that each position be rated. When these ratings were brought together, in many instances the values assigned to a final position varied so little among members of the group that a simple average was accepted as final value. When a divergence was great, discussion was obtained and the simple average gave us the accepted final weight. A correlation of the standings with the intelligent quotients was calculated—the Pearson coefficient being .41.

MULHALL ACHILLES

304. DUNLAP, K., and SNYDER, A., Practice Effects in Intelligence Tests. *J. of Exper. Psychol.*, 1920, 3, 396-403.

To determine the possible effects of "coaching," a college class of 44 men were tested four times on the Army "Alpha," approximately three weeks elapsing between each test. The results are recorded in graphs and tables. The investigators found that there was a definite general improvement from first to second, and from second to third (every case in the third round showing superiority to the first), with a general drop in the fourth. Reports from the testees stated that taking the first, second and third test was interesting, but that the fourth was a bore. This drop, the authors believe, is due in a measure to lack of sufficient incentive for increased effort, and the somewhat greater difficulty of the section on "General Information" in the fourth form. But the lessened inter-

est is the major cause for the decline. A consideration of the relative ratings of the different individuals in both the first and third tests show a comparative uniformity for the first quartile and a fluctuation in the fourth. In fact, in the three lower quartiles, there was a marked tendency to move forward or backward. This would indicate that if the lower men had had previous practice, and the higher men had not, a single examination would have given unfair ratings. Since, therefore, coaching on these intelligence tests is distinctly possible, and since a group of applicants would obviously vary in the amount of such practice acquired before taking the test, pains must be taken to have all candidates coached effectively or not at all.

SCHWESINGER (Radcliffe)

305. PETERSON, H. A., and KUDERNA, J. G. Army Alpha in the Normal Schools. *Sch. & Soc.*, 1921, 13, 476-480.

Army Alpha was given to 393 students at the Illinois State Normal University. A comparison of normal schools and colleges was then made. Grouping the Illinois State Normal, Kansas State Normal, the State Normal at St. Cloud, Minnesota and that at Winona, Minnesota, together, the median score for men was about 135. In 13 colleges the median was 137 for men. College women ranked from 6 to 8 points higher than normal school women. Freshmen in the college of liberal arts, University of Illinois, excelled freshmen in the Illinois State Normal University by 14 points. The difference was due to normal school students being "at present a less highly selected group." High school graduates considerably out-ranked non-graduates. The rural environment of most of the non-graduates seemed to account for this difference. High correlations were found between test scores and scholarship marks in 6 normal schools and colleges. Cases with high scores and low scholarship were largely explained by lack of effort or initiative. Superior scholarship records together with inferior test scores were explained by (1) the test scores being wrong, (2) over-grading, (3) the students' having special abilities, or (4) the students' compensating for inferior intelligence by industry, coöperation, etc. It is considered that mental tests may be of decided value in determining the ability of students and in "facilitating reclassification."

GAW (Boston Psychopathic Hospital)

306. Terman, L. M., *Intelligence Tests in Colleges and Universities. Sch. & Soc.*, 1921, 13, 481-494.

The value of a university's product is determined as much by the quality of the raw material as by instructional methods. Evidence has shown that colleges differ in the quality of students. For any university whose attendance is artificially restricted the selection of the ablest candidates is one of its most important problems. In discussing intelligence tests as an aid in this direction it need not be assumed that intelligence can be accurately measured. Intelligence tests are a method of predicting an individual's probable success in certain kinds of intellectual work. The value of the prediction is judged wholly in terms of correlation coefficients or other quantitatively objective evidence. The writer has prepared graphs and tables to show the value and limitations of the available intelligence tests in predicting various kinds of successes. The graphs were based on army mental test data and on the results of Binet and group tests with school children. The school data showed that for grammar school and high school pupils the scores of certain intelligence tests give a correlation of .75 to .80 with the best available composite criteria of educability. The results of similar tests in colleges and universities show correlations that are much lower (rarely above .5). A collection was made of all the available correlation coefficients which show the results of recent experiments with intelligence tests in colleges and universities. The Thorndike test (an extension and modification of the army test) correlates with university marks from .50 to .65. Anything above .50 is an improvement on a standard system of admitting students. However, the significance of a given correlation coefficient is a relative matter. The value of the intelligence test is chiefly that it furnishes data not duplicated by any of the other criteria. It tells the grade of work we have a right to expect and furnishes a starting point for investigating the causes of failures, etc. Poor students are a great expense, lower the standards of accomplishment, waste the time of the professors, etc. The writer suggests that each student be tested at the time of matriculation and that it might be advisable to allow the exceptionally able candidate who is short in some of the usual entrance requirements to enter the university by the test route. In this way the best students would be attracted and the weakest discouraged from entering. The desirability of establishing a personnel bureau at Stanford is strongly recommended. The functions of this bureau

would be: (1) Preparing and administering tests of general intelligence and analyzing the results so that they could be used in the study of failures, in vocational guidance, in the selection of students for scholarships, etc. (2) To conduct research with tests of special aptitude such as science, art, etc. (3) To work out, with the assistance of the professors in the various departments, "achievement" tests for determining the progress the students are making in getting the subject matter of their courses. These should in time replace the usual examinations. (4) To make a systematic study of the methods of securing trait ratings of students by their instructors, first, by ascertaining the human traits most amenable to accurate rating, and secondly, by finding what traits correlate highest with success in different academic and vocational lines. (5) To cooperate with the appointment office by supplying certain kinds of data necessary for making intelligent recommendations for positions. (6) Other lines of investigation such as the relation of interests to ability, the relation of high-school success to success in life, etc.

JONES (Radcliffe)

307. FERRARI, G. C. La grande riforma pedagogica dei Bolsceviki. *Riv. di Psicol.*, 16, 1920, 319-326.

In the midst of the general havoc brought about in Russia by the Bolshevists, it is somewhat of a surprise to learn that these same people, under the guidance of Vassiliewitch, more generally known by the name Lunatcharsky, are preparing a complete and radical reform of education, with the object of bringing it within reach of all. Since 1918 a National Education Council has been established to organize education on Soviet lines. With the unification of the scholastic system, all grades of teaching from the kindergarten to the university will follow an harmonious development. There will no longer be primary, secondary or high schools, but a continuous and progressive system common and obligatory and free for all from the ages of 7 to 16.

Beyond this period there follows a course of university extension. Special provision by means of civic and political education is made for the preparation of youths to take a directive part in the scholastic organization. Institutions for higher education and universities will be to a certain extent autonomous.

ELRINGTON (Washington)

308. SALVONI, M. La Scuola di educazione del' attività spontanea. *Riv. di Psicol.*, 16, 1920, 307-318.

Educational reform is required in which the laws and facts of affective and genetic psychology will replace the inefficient empiricism actually in vogue. Greater attention must be paid to interior motives, to their guidance, and to the development of initiative and spontaneous activity. The main object should be to give the young a coherent autonomous personality, an energetic will, a spirit of initiative, and a lively sense of social relations, ideals and duties. The young will not acquire these gifts effectively and with stability unless they are the final outcome of a *natural* process of the development of interior forces.

ELRINGTON (Washington)

309. SALADINI, R. L'alunno aritmetico. *Riv. di Psicol.*, 16, 1920, 81-100.

A methodological contribution to the differential psychology of school children showing special aptitudes for arithmetic. A group of fifteen boys and girls of ages varying from 7 to 12 years, formed the material for the experiments. To each was given a series of tests from which a valuation was obtained in general intelligence, capacity of attention, logical memory, intuition, numbers, rapidity of and precision of movement, aptitude for the task imposed.

The following provisional conclusions were arrived at:

Children showing special arithmetical ability are in general pupils of marked intelligence; above the average of a lively disposition, are quite conscious and pleased with their arithmetical capacities. The capacity is frequently hereditary, and not infrequently associated with artistic ability. Lastly the arithmetical ability is not incompatible with marked anthropological variations, nor with a delicate physical constitution, nor with the presence of slight signs connected with motility and sensibility.

ELRINGTON (Washington)

12. MENTAL EVOLUTION

310. JANKELEVICH, S. L'hérédité des caractères acquis dans ses rapports avec le problème du progrès. *Rev. Philos.*, 1920, 90, 273-294.

The current conception regards progress as a function of change (betterment) in external conditions. It really should be regarded

as conditioned by change (betterment) in man as well. Progress in this respect seems blocked, however; for all the theories and findings of Weissmann, de Vries and Mendel point toward the immutability of species and the non-acquisition of new characteristics hereditarily transmissible. Man has not changed physically or intellectually since he became a distinct species, and he is not likely to change in time to come. If progress is not possible in that which concerns the physical structure and intellectual organization of man, can we admit the possibility of moral progress?

The statement is sometimes made that we have advanced morally because we have abolished certain forms of strife and cruelty. This is not, however, a mark of moral progress. It only means that we have mitigated certain forms of human suffering, for most of which, by the way, man is himself responsible. The proof of our lack of progress is that we revert to the old forms whenever new conditions remove the artificial barriers we have erected.

The moral superman is an impossibility just as is the physical and intellectual superman. To depend upon a problematic moral evolution for human betterment is equivalent to depending upon physical evolution for the cure of physical ills. Disease is a product of environmental conditions, and only by improving these can man keep well. Likewise, immorality is a product of external social life, and only by making an environment which will make immorality useless will man become immune to evil.

KITSON (Indiana)

311. GUYER, M. F., Immune sera and certain biological problems.

Amer. Natural., 55, 1921, 97-115.

The first part of the paper deals with the history and uses of the precipitin test in detecting species differences between the proteins of various animals, and mentions the use of this test in determining the nature of blood stains, in detecting adulterations in chopped meats, etc. Since the discovery of "species specificity" has come the discovery of "organ specificity." Materials such as leucocytes, nervous tissue, spermatozoa and crystalline lenses form lytic or toxic substances when injected into the blood of a foreign species. These substances are more or less specific for the antigen used in the immunizing process. This entire field of research opens up the vital question: Is it not possible that a serum so constructed that

it will single out and destroy a certain element of an adult organ will also effect the representatives of that adult element lying in the germ plasm? In other words is this not a new way of getting at the old problem of the inheritance of acquired characteristics? With these problems in mind experiments were performed on rabbits and fowls. The lenses of newly killed rabbits were pulped and diluted with normal salt solution. The resulting emulsion was injected into several fowls, once weekly for four or five weeks, and in doses of 4 c.c. A week or ten days after the final injection blood from the fowls was injected into female rabbits at about the tenth day of pregnancy. At about this period in the life of the foetal rabbit the lens is developing rapidly. Although the eyes of the mothers remained unaffected, apparently, the eyes of 9 or more out of 61 young rabbits born under these conditions showed some form of defect. 48 control rabbits obtained from mothers injected with unsensitized fowl serum showed no such eye-defects. This anomaly is transmitted to subsequent generations. As far as the experiment informs us the effect lasted through as many as 8 generations with but the single original treatment. The imperfection tended to become worse in succeeding generations. The acquired imperfection seemed to have the general characteristics of a Mendelian recessive. The author concludes that this inheritance must have been passed on through the germ-plasm of the defective male. Young thus obtained by breeding transmit the defect as effectively as do individuals of the original defective strain. The question as to how this effect is produced has not been solved. This experiment however evidently demonstrates that specific antibodies can induce specific modifications in the germ-cell. After several attempts antibodies were produced in a pregnant rabbit by injections of pulped rabbit lens directly into the blood of the mother. In similar fashion a given male rabbit will develop antibodies against his own spermatozoa if he is injected intravenously with the latter. Experiments with typhoid vaccine yield evidence of inherited immunization. It is suggested that if such facts can be obtained experimentally with lens extract one might expect the same for other tissues and also that induced changes in the blood serum may lead to progressive as well as to regressive evolution and Lamarck's theory of use and disuse may after all apply in a way to the glandular system. Whether or not there exist blood conditions which will produce constructive changes rather than destructive changes remains to be ascertained.

WHEELER (Oregon)

312. FERRARI, G. C., Che cosa pensano i cani che parlano? *Riv. di Psicol.*, 16, 1920, 61-80.

The author reviews the experiments of Kindermann on a group of dogs trained to learn and carry out certain processes involving apparently arithmetical calculations, and the use of language. This is an interesting fact perhaps not yet clearly explained, but which as yet tells us nothing new concerning the psychic life of these curious animals. Certain facts cannot be ignored, which make the hypothesis improbable that phenomena of intelligence are concerned, and show rather that it is a question of pure mechanism or cerebral automatism.

ELRINGTON (Washington)

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NOTES AND NEWS

DR. SHEPHERD I. FRANZ has resigned as professor of physiology at the George Washington University Medical School.

DR. K. G. MILLER has been made Assistant Professor at the University of Pennsylvania.

PROFESSOR R. S. WOODWORTH of Columbia University has recently been elected a member of the National Academy of Sciences.

DR. J. E. ANDERSON of Yale University has recently been promoted to an Assistant Professorship.

It is announced that, at the exercises in commemoration of the one hundredth anniversary of the opening of the Bloomingdale Hospital on May 26, 1921, at White Plains, N. Y., the following will make addresses on psychiatric topics: Dr. P. Janet of Paris, Dr. R. G. Rows of London, Drs. L. F. Barker and A. Meyer of Baltimore.

